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RULES AND REGULATIONS OF THE SECRETARY OF AGRICULTURE

DEFINITIONS

§ 201.1 Meaning of words.

Words in the regulations in this part in the singular form shall be deemed to import the plural, and vice versa, as the case may demand.

[5 FR 28, Jan. 4, 1940]

§ 201.2 Terms defined.

When used in the regulations in this part the terms as defined in section 101 of the Act, unless modified in this section as provided in the Act, shall apply with equal force and effect. In addition, as used in §§ 201.1 through 201.159:

(a) The *Act.* The term ''Act'' means the FSA approved August 9, 1939 (53 Stat. 1275; 7 U.S.C. 1551–1611 as amended);

(b) *Person.* The term ''person'' includes a partnership, corporation, company, society, association, receiver, or trustee;

(c) *Secretary.* The term ''Secretary'' means the Secretary of Agriculture of the United States, or any officer or employee of the Department to whom authority has heretofore been delegated, or to whom authority may hereafter be delegated, to act in his stead;

(d) *Hearing Clerk.* The term ''Hearing Clerk'' means the Hearing Clerk, United States Department of Agriculture, Washington, DC;

(e) *Respondent.* The term ''respondent'' means a person against whom a complaint is issued;

(f) *Examiner.* The term ''examiner'' means an employee of the Department of Agriculture, designated by the Secretary to conduct hearings under the act, and §§ 201.1 through 201.159;

(g) FEDERAL REGISTER. The term ''FEDERAL REGISTER'' means the publication provided by the Act of July 26, 1935 (49 Stat. 500), and acts supplementary thereto and amendatory thereof;

(h) *Agricultural seeds.* The term ''agricultural seeds'' means the following kinds of grass, forage, and field crop seeds, that are used for seeding purposes in the United States:

Agrotricum—*x Agrotriticum Ciferri and Giacom.*
Alfalfa—*Medicago sativa* L.
Alfilaria—*Erodium cicutarium* (L.) L'Her.
Alyceclover—*Alysicarpus vaginalis* (L.) DC.
Bahiagrass—*Paspalum notatum* Fluegge
Barley—*Hordeum vulgare* L.
Barrelclover—*Medicago truncatula* Gaertn.
Bean, adzuki—*Vigna angularis* (Willd.) Ohwi and Ohashi
Bean, field—*Phaseolus vulgaris* L.
Bean, mung—*Vigna radiata* (L.) Wilczek
Beet, field—*Beta vulgaris* L. subsp. *vulgaris*
Beet, sugar—*Beta vulgaris* L. subsp. *vulgaris*
Beggarweed, Florida—*Desmodium tortuosum* (Sw.) DC.
Bentgrass, colonial—*Agrostis capillaris* L.
Bentgrass, creeping—*Agrostis stolonifera* L. var. *palustris* (Huds.) Farw.
Bentgrass, velvet—*Agrostis canina* L.
Bermudagrass—*Cynodon dactylon* (L.) Pers. var. *dactylon*
Bermudagrass, giant—*Cynodon dactylon* (L.) Pers. var. *Aridus* Harlan and de Wet
Bluegrass, annual—*Poa annua* L.
Bluegrass, bulbous—*Poa bulbosa* L.
Bluegrass, Canada—*Poa compressa* L.
Bluegrass, glaucantha—*Poa glauca* Vahl
Bluegrass, Kentucky—*Poa pratensis* L.
Bluegrass, Nevada—*Poa secunda* J.S. Presl
Bluegrass, rough—*Poa trivialis* L.
Bluegrass, Texas—*Poa arachnifera* Torr.
Bluegrass, wood—*Poa nemoralis* L.
Bluejoint—*Calamagrostis canadensis* (Michx.) P. Beauv.
Bluestem, big—*Andropogon gerardii* Vitm. var. *gerardii*
Bluestem, little—*Schizachyrium scoparium* (Michx.) Nash
Bluestem, sand—*Andropogon hallii* Hack.
Bluestem, yellow—*Bothriochloa ischaemum* (L.) Keng.
Bottlebrush-squirreltail—*Elymus elymoides* (Raf.) Swezey
Brome, field—*Bromus arvensis* L.
Brome, meadow—*Bromus biebersteinii* Roem. and Schult.
Brome, mountain—*Bromus marginatus* Steud.
Brome, smooth—*Bromus inermis* Leyss.
Broomcorn—*Sorghum bicolor* (L.) Moench
Buckwheat—*Fagopyrum esculentum* Moench

Buffalograss—*Buchloe dactyloides* (Nutt.) Engelm.
Buffelgrass—*Cenchrus ciliaris* L.
Burclover, California—*Medicago polymorpha* L.
Burclover, spotted—*Medicago arabica* (L.) Huds.
Burnet, little—*Sanguisorba minor* Scop.
Buttonclover—*Medicago orbicularis* (L.) Bartal.
Canarygrass—*Phalaris canariensis* L.
Canarygrass, reed—*Phalaris arundinacea* L.
Carpetgrass—*Axonopus fissifolius* (Raddi) Kuhlm.
Castorbean—*Ricinus communis* L.
Chess, soft—*Bromus hordeaceus* L.
Chickpea—*Cicer arietinum* L.
Clover, alsike—*Trifolium hybridum* L.
Clover, arrowleaf—*Trifolium vesiculosum* Savi
Clover, berseem—*Trifolium alexandrinum* L.
Clover, cluster—*Trifolium glomeratum* L.
Clover, crimson—*Trifolium incarnatum* L.
Clover, Kenya—*Trifolium semipilosum* Fresen.
Clover, ladino—*Trifolium repens* L.
Clover, lappa—*Trifolium lappaceum* L.
Clover, large hop—*Trifolium campestre* Schreb.
Clover, Persian—*Trifolium resupinatum* L.
Clover, red or
Red clover, mammoth—*Trifolium pratense* L.
Red clover, medium—*Trifolium pratense* L.
Clover, rose—*Trifolium hirtum All.*
Clover, small hop or suckling—*Trifolium dubium* Sibth.
Clover, strawberry—*Trifolium fragiferum* L.
Clover, sub or subterranean—*Trifolium subterraneum* L.
Clover, white—*Trifolium repens* L. (also see Clover, ladino)
Clover—(also see Alyceclover, Burclover, Buttonclover, Sourclover, Sweetclover)
Corn, field—*Zea mays* L.
Corn, pop—*Zea mays* L.
Cotton—*Gossypium spp.*
Cowpea—*Vigna unguiculata (L.) Walp. subsp. unguiculata*
Crambe—*Crambe abyssinica R.E. Fries*
Crested dogtail—*Cynosurus cristatus* L.
Crotalaria, lance—*Crotalaria lanceolata* E. Mey.
Crotalaria, showy—*Crotalaria spectabilis* Roth
Crotalaria, slenderleaf—*Crotalaria brevidens* Benth. var. *intermedia* (Kotschy) Polh.
Crotalaria, striped or smooth—*Crotalaria pallida* Ait.
Crotalaria, sunn—*Crotalaria juncea* L.
Crownvetch—*Coronilla varia* L.
Dallisgrass—*Paspalum dilatatum* Poir.
Dichondra—*Dichondra repens* Forst. and Forst. f.
Dropseed, sand—*Sporobolus cryptandrus* (Torr.) A. Gray
Emmer—*Triticum dicoccon* Schrank
Fescue, chewings—*Festuca rubra* L. subsp. *commutata* Gaud.
Fescue, hair—*Festuca tenuifolia* Sibth.
Fescue, hard—*Festuca brevipila* Tracey
Fescue, meadow—*Festuca pratensis* Huds.
Fescue, red—*Festuca rubra* L. subsp. *rubra*
Fescue, sheep—*Festuca ovina* L. var. *ovina*
Fescue, tall—*Festuca arundinacea* Schreb.
Flax—*Linum usitatissimum* L.
Galletagrass—*Hilaria jamesii* (Torr.) Benth.
Grama, blue—*Bouteloua gracilis* (Kunth) Steud.
Grama, side-oats—*Bouteloua curtipendula* (Michx.) Torr.
Guar—*Cyamopsis tetragonoloba* (L.) Taub.
Guineagrass—*Panicum maximum* Jacq. var. *maximum*
Hardinggrass—*Phalaris stenoptera* Hack.
Hemp—*Cannabis sativa* L.
Indiangrass, yellow—*Sorghastrum nutans* (L.) Nash
Indigo, hairy—*Indigofera hirsuta* L.
Japanese lawngrass—*Zoysia japonica* Steud.
Johnsongrass—*Sorghum halepense* (L.) Pers.
Kenaf—*Hibiscus cannabinus* L.
Kochia, forage—*Kochia prostrata* (L.) Schrad.
Kudzu—*Pueraria montana* (Lour.) Merr. var. *lobata* (Willd.) Maesen and S. Almeida
Lentil—*Lens culinaris* Medik.
Lespedeza, Korean—*Kummerowia stipulacea* (Maxim.) Makino
Lespedeza, sericea or Chinese—*Lespedeza cuneata*
(Dum.-Cours.) G. Don
Lespedeza, Siberian—*Lespedeza juncea* (L. f.) Pers.
Lespedeza, striate—*Kummerowia striata* (Thunb.) Schindler
Lovegrass, sand—*Eragrostis trichodes* (Nutt.) Wood
Lovegrass, weeping—*Eragrostis curvula* (Schrad.) Nees
Lupine, blue—*Lupinus angustifolius* L.
Lupine, white—*Lupinus albus* L.
Lupine, yellow—*Lupinus luteus* L.
Manilagrass—*Zoysia matrella* (L.) Merr.
Meadow foxtail—*Alopecurus pratensis* L.
Medic, black—*Medicago lupulina* L.
Milkvetch or cicer milkvetch—*Astragalus cicer* L.
Millet, browntop—*Brachiaria ramosa* (L.) Stapf
Millet, foxtail—*Setaria italica* (L.) Beauv.
Millet, Japanese—*Echinochloa frumentacea* Link
Millet, pearl—*Pennisetum glaucum* (L.) R. Br.
Millet, proso—*Panicum miliaceum* L.
Molassesgrass—*Melinis minutiflora* Beauv.
Mustard, black—*Brassica nigra* (L.) Koch
Mustard, India—*Brassica juncea* (L.) Czernj. and Coss.
Mustard, white—*Sinapis alba* L.
Napiergrass—*Pennisetum purpureum* Schumach.
Needlegrass, green—*Stipa viridula* Trin.
Oat—*Avena byzantina* C. Koch, A. *sativa* L., A. *nuda* L.
Oatgrass, tall—*Arrhenatherum elatius* (L.) J.S. Presl and K.B. Presl
Orchardgrass—*Dactylis glomerata* L.

Panicgrass, blue—*Panicum antidotale* Retz.
Panicgrass, green—*Panicum maximum* Jacq. var. *trichoglume* Robyns
Pea, field—*Pisum sativum* L.
Peanut—*Arachis hypogaea* L.
Poa trivialis—(see Bluegrass, rough)
Rape, annual—*Brassica napus* L. var. *annua* Koch
Rape, bird—*Brassica rapa* L. subsp. *rapa*
Rape, turnip—*Brassica rapa* L. subsp. *silvestris* (Lam.) Janchen
Rape, winter—*Brassica napus* L. var. *biennis* (Schubl. and Mart.) Reichb.
Redtop—*Agrostis gigantea* Roth
Rescuegrass—*Bromus catharticus* Vahl
Rhodesgrass—*Chloris gayana* Kunth
Rice—*Oryza sativa* L.
Ricegrass, Indian—*Oryzopsis hymenoides* (Roem. and Schult.) Ricker
Roughpea—*Lathyrus hirsutus* L.
Rye—*Secale cereale* L.
Rye, mountain—*Secale strictum* (K.B. Presl) K.B. Presl subsp. *strictum*
Ryegrass, annual or Italian—*Lolium multiflorum* Lam.
Ryegrass, intermediate—*Lolium* x *hybridum* Hausskn.
Ryegrass, perennial—*Lolium perenne* L.
Ryegrass, Wimmera—*Lolium rigidum* Gaud.
Safflower—*Carthamus tinctorius* L.
Sagewort, Louisiana—*Artemisia ludoviciana* Nutt.
Sainfoin—*Onobrychis viciifolia* Scop.
Saltbush, fourwing—*Atriplex canescens* (Pursh) Nutt.
Sesame—*Sesamum indicum* L.
Sesbania—*Sesbania exaltata* (Raf.) A.W. Hill
Smilo—*Piptatherum miliaceum* (L.) Coss
Sorghum—*Sorghum bicolor* (L.) Moench
Sorghum almum—*Sorghum* x *almum* L. Parodi
Sorghum-sudangrass—*Sorghum* x *drummondii* (Steud.) Millsp. and Chase
Sorgrass—Rhizomatous derivatives of a johnsongrass x sorghum cross or a johnsongrass x sudangrass cross
Southernpea—(See Cowpea)
Sourclover—*Melilotus indicus* (L.) All.
Soybean—*Glycine max* (L.) Merr.
Spelt—*Triticum spelta* L.
Sudangrass—*Sorghum* x *drummondii* (Steud.) Millsp. and Chase
Sunflower—*Helianthus annuus* L.
Sweetclover, white—*Melilotus albus* Medik.
Sweetclover, yellow—*Melilotus officinalis* Lam.
Sweet vernalgrass—*Anthoxanthum odoratum* L.
Sweetvetch, northern—*Hedysarum boreale* Nutt.
Switchgrass—*Panicum virgatum* L.
Timothy—*Phleum pratense* L.
Timothy, turf—*Phleum bertolonii* DC.
Tobacco—*Nicotiana tabacum* L.
Trefoil, big—*Lotus uliginosus* Schk.
Trefoil, birdsfoot—*Lotus corniculatus* L.
Triticale—x *Triticosecale* Wittm. (*Secale* x *Triticum*)
Vaseygrass—*Paspalum urvillei* Steud.
Veldtgrass—*Ehrharta calycina* J.E. Smith
Velvetbean—*Mucuna pruriens* (L.) DC. var. *utilis* (Wight) Burck
Velvetgrass—*Holcus lanatus* L.
Vetch, common—*Vicia sativa* L. subsp. *sativa*
Vetch, hairy—*Vicia villosa* Roth subsp. *villosa*
Vetch, Hungarian—*Vicia pannonica* Crantz
Vetch, monantha—*Vicia articulata* Hornem.
Vetch, narrowleaf or blackpod—*Vicia sativa* L. subsp. *nigra* (L.) Ehrh.
Vetch, purple—*Vicia benghalensis* L.
Vetch, woollypod or winter—*Vicia villosa* Roth subsp. *varia* (Host) Corb.
Wheat, common—*Triticum aestivum* L.
Wheat, club—*Triticum compactum* Host
Wheat, durum—*Triticum durum* Desf.
Wheat, Polish—*Triticum polonicum* L.
Wheat, poulard—*Triticum turgidum* L.
Wheat x Agrotricum—*Triticum* x *Agrotriticum*
Wheatgrass, beardless—*Pseudoroegneria spicata* (Pursh) A. Love
Wheatgrass, crested or fairway crested—*Agropyron cristatum* (L.) Gaertn.
Wheatgrass, crested or standard crested—*Agropyron desertorum* (Link) Schult.
Wheatgrass, intermediate—*Elytrigia intermedia* (Host) Nevski subsp. *intermedia*
Wheatgrass, pubescent—*Elytrigia intermedia* (Host) Nevski subsp. *intermedia*
Wheatgrass, Siberian—*Agropyron fragile* (Roth) Candargy subsp. *sibiricum* (Willd.) Meld.
Wheatgrass, slender—*Elymus trachycaulus* (Link) Shinn.
Wheatgrass, streambank—*Elymus lanceolatus* (Scribn. and J.G. Smith) Gould subsp. *lanceolatus*
Wheatgrass, tall—*Elytrigia elongata* (Host) Nevski
Wheatgrass, western—*Pascopyrum smithii* (Rydb.) A. Love
Wildrye, basin—*Leymus cinereus* (Scribn. and Merr.) A. Love
Wildrye, Canada—*Elymus canadensis* L.
Wildrye, Russian—*Psathyrostachys juncea* (Fisch.) Nevski
Zoysia japonica—(see Japanese lawngrass)
Zoysia matrella—(see Manilagrass)

(i) *Vegetable seeds.* The term ''vegetable seeds'' means the seeds of the following kinds that are or may be grown in gardens or on truck farms and are or may be generally known and sold under the name of vegetable seeds:

Artichoke—*Cynara cardunculus* L. subsp. *cardunculus*
Asparagus—*Asparagus officinalis* Baker
Asparagusbean or yard-long bean—*Vigna unguiculata* (L.)
Walp. subsp. *sesquipedalis* (L.) Verdc.
Bean, garden—*Phaseolus vulgaris* L.

Bean, lima—*Phaseolus lunatus* L.
Bean, runner or scarlet runner—*Phaseolus coccineus* L.
Beet—*Beta vulgaris* L. subsp. *vulgaris*
Broadbean—*Vicia faba* L.
Broccoli—*Brassica oleracea* L. var. *botrytis* L.
Brussels sprouts—*Brassica oleracea* L. var. *gemmifera* DC.
Burdock, great—*Arctium lappa* L.
Cabbage—*Brassica oleracea* L. var. *capitata* L.
Cabbage, Chinese—*Brassica rapa* L. subsp. *pekinensis* (Lour.) Hanelt
Cabbage, tronchuda—*Brassica oleracea* L. var. *costata* DC.
Cantaloupe—(see Melon)
Cardoon—*Cynara cardunculus* L. subsp. *cardunculus*
Carrot—*Daucus carota* L. subsp. *sativus* (Hoffm.) Arcang.
Cauliflower—*Brassica oleracea* L. var. *botrytis* L.
Celeriac—*Apium graveolens* L. var. *rapaceum* (Mill.) Gaud.
Celery—*Apium graveolens* L. var. *dulce* (Mill.) Pers.
Chard, Swiss—*Beta vulgaris* L. subsp. *cicla* (L.) Koch
Chicory—*Cichorium intybus* L.
Chives—*Allium schoenoprasum* L.
Citron—*Citrullus lanatus* (Thunb.) Matsum. and Nakai var. *citroides* (Bailey) Mansf.
Collards—*Brassica oleracea* L. var. *acephala* DC.
Corn, sweet—*Zea mays* L.
Cornsalad—*Valerianella locusta* (L.) Laterrade
Cowpea—*Vigna unguiculata* (L.) Walp. subsp. *unguiculata*
Cress, garden—*Lepidium sativum* L.
Cress, upland—*Barbarea verna* (Mill.) Asch.
Cress, water—*Rorippa nasturtium-aquaticum* (L.) Hayek
Cucumber—*Cucumis sativus* L.
Dandelion—*Taraxacum officinale* Wigg.
Dill—*Anethum graveolens* L.
Eggplant—*Solanum melongena* L.
Endive—*Cichorium endivia* L.
Gherkin, West India—*Cucumis anguria* L.
Kale—*Brassica oleracea* L. var. *acephala* DC.
Kale, Chinese—*Brassica oleracea* L. var. *alboglabra* (Bailey) Musil
Kale, Siberian—*Brassica napus* L. var. *pabularia* (DC.) Reichb.
Kohlrabi—*Brassica oleracea* L. var. *gongylodes* L.
Leek—*Allium porrum* L.
Lettuce—*Lactuca sativa* L.
Melon—*Cucumis melo* L.
Muskmelon—(see Melon).
Mustard, India—*Brassica juncea* (L.) Czernj. and Coss.
Mustard, spinach—*Brassica perviridis* (Bailey) Bailey
Okra—*Abelmoschus esculentus* (L.) Moench
Onion—*Allium cepa* L.
Onion, Welsh—*Allium fistulosum* L.
Pak-choi—*Brassica rapa* L. subsp. *chinensis* (L.) Hanelt
Parsley—*Petroselinum crispum* (Mill.) A.W. Hill
Parsnip—*Pastinaca sativa* L.
Pea—*Pisum sativum* L.
Pepper—*Capsicum* spp.
Pe-tsai—(see Chinese cabbage).
Pumpkin—*Cucurbita pepo* L., C. *moschata* (Duchesne) Poiret, and C. *maxima* Duchesne
Radish—*Raphanus sativus* L.
Rhubarb—*Rheum rhabarbarum* L.
Rutabaga—*Brassica napus* L. var. *napobrassica* (L.) Reichb.
Sage—*Salvia officinalis* L.
Salsify—*Tragopogon porrifolius* L.
Savory, summer—*Satureja hortensis* L.
Sorrel—*Rumex acetosa* L.
Southernpea—(see Cowpea).
Soybean—*Glycine max* (L.) Merr.
Spinach—*Spinacia oleracea* L.
Spinach, New Zealand—*Tetragonia tetragonioides* (Pall.) Ktze.
Squash—*Cucurbita pepo* L., C. *moschata* (Duchesne) Poiret, and C. *maxima* Duchesne
Tomato—*Lycopersicon esculentum* Mill.
Tomato, husk—*Physalis pubescens* L.
Turnip—*Brassica rapa* L. subsp. *rapa*
Watermelon—*Citrullus lanatus* (Thunb.) Matsum. and Nakai var. *lanatus*

(j) *Regulations.* The term ''regulations'' means the rules and regulations promulgated by the Secretary of Agriculture and the joint rules and regulations promulgated by the Secretary of the Treasury and the Secretary of Agriculture under the act.

(k) *Joint regulations.* The term ''joint regulations'' means the joint rules and regulations promulgated by the Secretary of the Treasury and the Secretary of Agriculture.

(l) *Complete record.* (1) The term ''complete record'' means information which relates to the origin, treatment, germination, and purity (including variety) of each lot of agricultural seed transported or delivered for transportation in interstate commerce, or which relates to the treatment, germination, and variety of each lot of vegetable seed transported or delivered for transportation in interstate commerce. Such information includes seed samples and records of declarations, labels, purchases, sales, cleaning, bulking, treatment, handling, storage, analyses, tests, and examinations.

(2) The complete record kept by each person for each treatment substance or lot of seed consists of the information pertaining to his own transactions and the information received from others pertaining to their transactions with

respect to each treatment substance or lot of seed.

(m) *Declaration.* The term ''declaration'' means a written statement of a grower, shipper, processor, dealer, or importer giving for any lot of seed the kind, variety, type, origin, or the use for which the seed is intended.

(n) *Declaration of origin.* The term ''declaration of origin'' means a declaration of a grower or country shipper in the United States stating for each lot of agricultural seed (1) kind of seed, (2) lot number or other identification, (3) State where seed was grown and the county where grown if to be labeled showing the origin as a portion of a State, (4) quantity of seed, (5) date shipped or delivered, (6) to whom sold, shipped, or delivered, and (7) the signature and address of the grower or country shipper issuing the declaration. If the declaration is issued by a grower and the identity of the person delivering the seed is unknown to the receiver, the motor vehicle license number or other identification of the delivering agency should be entered on the declaration by the receiver. If a country shipper's declaration includes seed shipped or delivered to him by another country shipper, it shall give for each lot the other country shipper's lot number as included in the other country shipper's declaration of origin.

(o) *Declaration of kind, variety, or type.* The term ''declaration of kind, variety, or type'' means a declaration of a grower stating for each lot of seed (1) the name of the kind, variety, or type stated in accordance with §§ 201.9 through 201.12, (2) lot number or other identification, (3) place where seed was grown, (4) quantity of seed, (5) date shipped or delivered, (6) to whom sold, shipped or delivered, and (7) the signature and address of the grower issuing the declaration.

(p) *Mixture.* The term ''mixture'' means seeds consisting of more than one kind or variety, each present in excess of 5 percent of the whole.

(q) *Coated Seed.* The term ''coated seed'' means any seed unit covered with any substance that changes the size, shape, or weight of the original seed. Seeds coated with ingredients such as, but not limited to, rhizobia, dyes, and pesticides are excluded.

(r) *Grower.* The term ''grower'' means any person who produces directly or through a growing contract, or is a seed-crop sharer in seed which is sold, offered for sale, transported, or offered for transportation.

(s) *Country shipper.* The term ''country shipper'' means any person located in a producing area who purchases seed locally for shipment to seed dealers or to other country shippers.

(t) *Dealer.* The term ''dealer'' means any person who cleans, processes, sells, offers for sale, transports, or delivers for transportation seeds in interstate commerce.

(u) *Consumer.* The term ''consumer'' means any person who purchases or otherwise obtains seed for sowing but not for resale.

(v) *Lot of seed.* The term ''lot of seed'' means a definite quantity of seed identified by a lot number, every portion or bag of which is uniform, within permitted tolerances, for the factors which appear in the labeling.

(w) *Purity.* The term ''purity'' means the name or names of the kind, type, or variety and the percentage or percentages thereof; the percentage of other agricultural seed or crop seed; the percentage of weed seeds, including noxious weed seeds; the percentage of inert matter; and the names of the noxious weed seeds and the rate of occurrence of each.

(x) *Inoculant.* The term ''inoculant'' means a commercial preparation containing nitrogen-fixing bacteria applied to seed.

(y) *Hybrid.* The term ''hybrid'' applied to kinds or varieties of seed means the first generation seed of a cross produced by controlling the pollination and by combining (1) two or more inbred lines; (2) one inbred or a single cross with an open pollinated variety; or (3) two selected clones, seed lines, varieties, or species. ''Controlling the pollination'' means to use a method of hybridization which will produce pure seed which is at least 75 percent hybrid seed. Hybrid designations shall be treated as variety names.

(z) *Processing.* For the purpose of section 203 (b)(2)(C) of the act the term ''processing'' means cleaning, scarifying, or blending to obtain uniform quality, and other operations which

would change the purity or germination of the seed and therefore require retesting to determine the quality of the seed, but does not include operations such as packaging, labeling, blending together of uniform lots of the same kind or variety without cleaning, or the preparation of a mixture without cleaning, any of which would not require retesting to determine the quality of the seed.

(aa) *Agricultural Marketing Service* means the Agricultural Marketing Service, United States Department of Agriculture.

(bb) *Breeder seed.* Breeder seed is a class of certified seed directly controlled by the originating or sponsoring plant breeding institution, or person, or designee thereof, and is the source for the production of seed of the other classes of certified seed.

(cc) *Foundation seed.* Foundation seed is a class of certified seed which is the progeny of Breeder or Foundation seed and is produced and handled under procedures established by the certifying agency, in accordance with this part, for producing the Foundation class of seed, for the purpose of maintaining genetic purity and identity.

(dd) *Registered seed.* Registered seed is a class of certified seed which is the progeny of Breeder or Foundation seed and is produced and handled under procedures established by the certifying agency, in accordance with this part, for producing the Registered class of seed, for the purpose of maintaining genetic purity and identity.

(ee) *Certified seed.* Certified seed is a class of certified seed which is the progeny of Breeder, Foundation, or Registered seed, except as provided in §201.70, and is produced and handled under procedures established by the certifying agency, in accordance with this part, for producing the Certified class of seed, for the purpose of maintaining genetic purity and identity.

(ff) *Off-type.* The term ''off-type'' means a plant or seed which deviates in one or more characteristics from that which has been described in accordance with §201.68(c) as being usual for the strain or variety.

(gg) *Inbred line.* The term ''inbred line'' means a relatively true-breeding strain resulting from at least five successive generations of controlled self-fertilization or of backcrossing to a recurrent parent with selection, or its equivalent, for specific characteristics.

(hh) *Single cross.* The term ''single cross'' means the first generation hybrid between two inbred lines.

(ii) *Foundation single cross.* The term ''foundation single cross'' means a single cross used in the production of a double cross, a three-way, or a top cross.

(jj) *Double cross.* The term ''double cross'' means the first generation hybrid between two single crosses.

(kk) *Top cross.* The term ''top cross'' means the first generation hybrid of a cross between an inbred line and an open-pollinated variety or the first-generation hybrid between a single cross and an open-pollinated variety.

(ll) *Three-way cross.* The term ''three-way cross'' means a first generation hybrid between a single cross and an inbred line.

(mm) *Open-pollination.* The term ''open-pollination'' means pollination that occurs naturally as opposed to controlled pollination, such as by detasselling, cytoplasmic male sterility, self-incompatibility or similar processes.

[5 FR 28, Jan. 4, 1940]

EDITORIAL NOTE: For Federal Register citations affecting §201.2, see the List of CFR Sections Affected in the Finding Aids section of this volume.

ADMINISTRATION

§201.3 Administrator.

The Administrator of the Agricultural Marketing Service may perform such duties as the Secretary require in enforcing the provisions of the act and of the regulations in this part.

[5 FR 30, Jan. 4, 1940, as amended at 13 FR 8731, Dec. 30, 1948; 19 FR 57, Jan. 6, 1954; 59 FR 66491, Dec. 14, 1994]

RECORDS FOR AGRICULTURAL AND VEGETABLE SEEDS

§201.4 Maintenance and accessibility.

(a) Each person transporting or delivering for transportation in interstate commerce agricultural or vegetable seed subject to the act shall keep for a period of 3 years a complete record of

each lot of such seed so transported or delivered, including a sample representing each lot of such seed, except that any seed sample may be discarded 1 year after the entire lot represented by such sample has been disposed of by such person.

(b) Each sample of agricultural seed retained shall be at least the weight required for a noxious-weed seed examination as set forth in §201.46 and each sample of vegetable seed retained shall consist of at least 400 seeds. The record shall be kept in such manner as to permit comparison with the records required to be kept by other persons for the same lot of seed so that the origin, treatment, germination, and purity (including variety) of agricultural seed and the treatment, germination and variety of vegetable seed may be traced from the grower to the ultimate consumer and so that the lot of seed may be correctly labeled. The record shall be accessible for inspection by the authorized agents of the Secretary for purposes of the effective administration of the act at any time during customary business hours.

[24 FR 3951, May 15, 1959, as amended at 32 FR 12778, Sept. 6, 1967]

§201.5 Origin.

(a) The complete record for any lot of seed of alfalfa, red clover, white clover, or field corn, except hybrid seed corn, shall include a declaration of origin, or information traceable to a declaration of origin or evidence showing that a declaration of origin could not be obtained.

(b) Each country shipper shall retain a copy of each declaration which he issues and shall attach thereto a detailed record showing the names and addresses of growers or country shippers from whom the seed was purchased, the quantity of seed purchased from each, and the date on which it was delivered to him.

[5 FR 30, Jan. 4, 1940, as amended at 20 FR 7929, Oct. 21, 1955]

§201.6 Germination.

The complete record shall include the records of all laboratory tests for germination and hard seed for each lot of seed offered for transportation in whole or in part. The record shall show the kind of seed, lot number, date of test, percentage of germination and hard seeds, and such other information as may be necessary to show the method used.

[5 FR 30, Jan. 4, 1940]

§201.7 Purity (including variety).

The complete record for any lot of seed shall include (a) records of analyses, tests, and examinations including statements of weed seeds, noxious weed seeds, inert matter, other agricultural seeds, and of any determinations of kind, variety, or type and a description of the methods used; and (b) for seeds indistinguishable by seed characteristics, records necessary to disclose the kind, variety, or type, including a grower's declaration of kind, variety, or type or an invoice, or other document establishing the kind, variety, or type to be that stated, and a representative sample of the seed. The grower's declaration shall be obtained and kept by the person procuring the seed from the grower. A copy of the grower's declaration and a sample of the seed shall be retained by the grower.

[5 FR 30, Jan. 4, 1940, as amended at 20 FR 7929, Oct. 21, 1955; 24 FR 3951, May 15, 1959]

§201.7a Treated seed.

The complete record for any lot consisting of or containing treated seed shall include records necessary to disclose the name of any substance or substances used in the treatment of such seed, including a label or invoice or other document received from any person establishing the name of any substance or substances used in the treatment to be as stated, and a representative sample of the treated seed.

[32 FR 12778, Sept. 6, 1967]

LABELING AGRICULTURAL SEEDS

§201.8 Contents of the label.

The label shall contain the required information in any form that is clearly legible and complies with the regulations in this part. The information may be on a tag attached securely to the container, or may be printed in a conspicuous manner on a side or the top of the container. The label may

contain information in addition to that required by the act, provided such information is not misleading.

[5 FR 30 Jan. 4, 1940, as amended at 24 FR 3952, May 15, 1959]

§201.9 Kind.

The name of each kind of seed present in excess of 5 percent shall be shown on the label and need not be accompanied by the word ''kind.'' When two or more kinds of seed are named on the label, the name of each kind shall be accompanied by the percentage of each. When only one kind of seed is present in excess of 5 percent and no variety name or type designation is shown, the percentage of that kind may be shown as ''pure seed'' and such percentage shall apply only to seed of the kind named.

[5 FR 30, Jan. 4, 1940]

§201.10 Variety.

(a) The following kinds of agricultural seeds are generally labeled as to variety and shall be labeled to show the variety name or the words ''Variety Not Stated.''

Alfalfa; Bahiagrass; Barley; Bean, field; Beet, field; Brome, smooth; Broomcorn; Clover, crimson; Clover, red; Clover, white; Corn, field; Corn, pop; Cotton; Cowpea; Crambe; Fescue, tall; Flax; Lespedeza, striate; Millet, foxtail; Millet, pearl; Oat; Pea, field; Peanut; Rice; Rye; Safflower; Sorghum; Sorghum-sudangrass, Soybean; Sudangrass; Sunflower; Tobacco; Trefoil, birdsfoot; Triticale; Wheat, common; Wheat, durum.

(b) If the name of the variety is given, the name may be associated with the name of the kind with or without the words ''kind and variety.'' The percentage in such case, which may be shown as ''pure seed,'' shall apply only to seed of the variety named, except for the labeling of hybrids as provided in §201.11a. If separate percentages for the kind and the variety or hybrid are shown, the name of the kind and the name of the variety or the term ''hybrid'' shall be clearly associated with the respective percentages. When two or more varieties are present in excess of 5 percent and are named on the label, the name of each variety shall be accompanied by the percentage of each.

[32 FR 12778, Sept. 6, 1967, and 33 FR 10840, July 31, 1968, as amended at 35 FR 6108, Apr. 15, 1970; 59 FR 64491, Dec. 14, 1994]

§201.11 Type.

(a) When type is designated, such designation may be associated with the name of the kind but shall in all cases be clearly associated with the word ''type.'' The percentage, which may be shown as ''pure seed'', shall apply only to the type designated. If separate percentages for the kind and the type are shown, such percentages shall be clearly associated with the name of the kind and the name of the type.

(b) If the type designation does not include a variety name, it shall include a name descriptive of a group of varieties of similar character and the pure seed shall be at least 90 percent of one or more varieties all of which conform to the type designation.

(c) If the name of a variety is used as a part of the type designation, the seed shall be of that variety and may contain: (1) An admixture of seed of other indistinguishable varieties of the same kind and of similar character; or, (2) an admixture of indistinguishable seeds having genetic characteristics dissimilar to the variety named by reason of cross-fertilization with other varieties. In either case, at least 90 percent of the pure seed shall be of the variety named or upon growth shall produce plants having characteristics similar to the variety named.

[5 FR 30, Jan. 4, 1940]

§201.11a Hybrid.

If any one kind or kind and variety of seed present in excess of 5 percent is ''hybrid'' seed, it shall be designated ''hybrid'' on the label. The percentage that is hybrid shall be at least 95 percent of the percentage of pure seed shown unless the percentage of pure seed which is hybrid seed is shown separately. If two or more kinds or varieties are present in excess of 5 percent and are named on the label, each that is hybrid shall be designated as hybrid on the label. Any one kind or kind and variety that has pure seed which is less

than 95 percent but more than 75 percent hybrid seed as a result of incompletely controlled pollination in a cross shall be labeled to show (a) the percentage of pure seed that is hybrid seed or (b) a statement such as ''Contains from 75 percent to 95 percent hybrid seed.'' No one kind or variety of seed shall be labeled as hybrid if the pure seed contains less than 75 percent hybrid seed.

[33 FR 10840, July 31, 1968]

§ 201.12 Name of kind and variety.

The representation of kind or kind and variety shall be confined to the name of the kind or kind and variety determined in accordance with § 201.34. The name shall not have affixed thereto words or terms that create a misleading impression as to the history or characteristics of the kind or variety.

[20 FR 7929, Oct. 21, 1955]

§ 201.12a Lawn and turf seed mixtures.

Seed mixtures intended for lawn and turf purposes shall be designated as a mixture on the label and each seed component shall be listed on the label in the order of predominance.

[49 FR 1172, Jan. 10, 1984]

§ 201.13 Lot number or other identification.

The lot number or other identification shall be shown on the label and shall be the same as that used in the records pertaining to the same lot of seed.

[5 FR 30, Jan. 4, 1940, as amended at 59 FR 64491, Dec. 14, 1994]

§ 201.14 Origin.

(a) Alfalfa, red clover, white clover, and field corn (except hybrid seed corn) shall be labeled to show: (1) The origin, if known; or (2) if the origin is not known, the statement ''origin unknown.''

(b) Whenever such seed originates in more than one State, the name of each State and the percentage of seed originating in each State shall be given in the order of its predominance. Whenever such seed originates in a portion of a State, it shall be permissible to label such seed as originating in such portion of a State.

(c) Reasonable precautions to insure that the origin of seed is known shall include the maintaining of a record as described in § 201.5. The examination of the seed and any pertinent facts may be taken into consideration in determining whether reasonable precautions have been taken to insure the origin to be that which is represented.

[5 FR 31, Jan. 4, 1940, as amended at 20 FR 7929, Oct. 21, 1955; 32 FR 12779, Sept. 6, 1967]

§ 201.15 Weed seeds.

The percentage of weed seeds shall include seeds of plants considered weeds in the State into which the seed is offered for transportation or transported and shall include noxious weed seeds.

[5 FR 31, Jan. 4, 1940]

§ 201.16 Noxious weed seeds.

The names of the kinds of noxious weed seeds and the rate of occurrence of each shall be expressed in the label in accordance with, and the rate of occurrence shall not exceed the rate permitted by, the law and regulations of the State into which the seed is offered for transportation or is transported. If in the course of such transportation, or thereafter, the seed is diverted to another State of destination, the person or persons responsible for such diversion shall cause the seed to be relabeled with respect to noxious-weed seed content, if necessary, to conform to the laws and regulations of the State to which the seed is diverted.

[5 FR 31, Jan. 4, 1940, as amended at 20 FR 7929, Oct. 21, 1955]

§ 201.17 Noxious-weed seeds in the District of Columbia.

Noxious-weed seeds in the District of Columbia are: Quackgrass (Agropyron repens), Canada thistle (Cirsium arvense), field bindweed (Convolvulus arvensis), bermudagrass (Cynodon dactylon), giant bermudagrass (Cynodon dactylon var. aridus), annual bluegrass (Poa annua), and wild garlic or wild onion (Allium canadense or Allium vineale). The name and number per pound of each kind of such noxious-

weed seeds present shall be stated on the label.

[32 FR 12779, Sept. 6, 1967, as amended at 35 FR 6108, Apr. 15, 1970; 59 FR 64491, Dec. 14, 1994]

§ 201.18 Other agricultural seeds (crop seeds).

Agricultural seeds other than those included in the percentage or percentages of kind, variety, or type may be expressed as ''crop seeds'' or ''other crop seeds,'' but the percentage shall include collectively all kinds, varieties, or types not named upon the label.

[5 FR 31, Jan. 4, 1940]

§ 201.19 Inert matter.

The label shall show the percentage by weight of inert matter.

[5 FR 31, Jan. 4, 1940]

§ 201.20 Germination.

The label shall show the percentage of germination each kind, or kind and variety, or kind and type, or kind and hybrid of agricultural seed present in excess of 5 percent or shown in the labeling to be present in a proportion of 5 percent or less: *Provided,* That this shall not apply to freshly harvested Kentucky bluegrass or sugar beet seed transported or delivered for transportation during the months of July, August, and September for seeding during the year in which the seed is produced.

[24 FR 3953, May 15, 1959, as amended at 32 FR 12779, Sept. 6, 1967; 59 FR 64491, Dec. 14, 1994]

§ 201.21 Hard seed.

The label shall show the percentage of hard seed, if any is present, for any seed required to be labeled as to the percentage of germination, and the percentage of hard seed shall not be included as part of the germination percentage.

[24 FR 3953, May 15, 1959]

§ 201.22 Date of test.

(a) The label shall show the month and year in which the germination test was completed. No more than 5 calendar months shall have elapsed between the last day of the month in which the germination test was completed and the date of transportation or delivery for transportation in interstate commerce, except for seed in hermetically sealed containers as provided in § 201.36c in which case no more than 24 calendar months shall have elapsed between the last day of the month in which the germination test was completed prior to packaging and the date of transportation or delivery for transportation in interstate commerce.

(b) In the case of a seed mixture, it is only necessary to state the calendar month and year of such test for the kind or variety or type of agricultural seed contained in such mixture which has the oldest calendar month and year test date among the test conducted on all the kinds or varieties or types of agricultural seed contained in such mixture.

(c) The following kinds shall be tested within the indicated time before interstate shipment:

Agricultural seeds and mixtures thereof	Months from test date to shipment
Bentgrass, Colonial	15
Bentgrass, Creeping	15
Bluegrass, Kentucky	15
Fescue, Chewings	15
Fescue, Hard	15
Fescue, Red	15
Fescue, Tall	15
Ryegrass, Annual	15
Ryegrass, Perennial	15

[5 FR 31, Jan. 4, 1940, as amended at 32 FR 12779, Sept. 6, 1967; 49 FR 1172, Jan. 10, 1984; 59 FR 64491, Dec. 14, 1994]

§ 201.23 Name of shipper or consignee.

The full name and address of either the shipper or consignee shall appear upon the label. If the name and address of the shipper are not shown upon the label, a code designation identifying the shipper shall be shown.

[5 FR 31, Jan. 4, 1940]

§ 201.24 Code designation.

The code designation used in lieu of the full name and address of the person who transports or delivers seed for transportation in interstate commerce shall be approved by the Administrator of the Agricultural Marketing Service or such other person as may be designated by him for the purpose. When

used, the code designation shall appear on the label in a clear and legible manner.

[5 FR 31, Jan. 4, 1940, as amended at 13 FR 8731, Dec. 30, 1948; 19 FR 57, Jan. 6, 1954]

§ 201.24a Inoculated seed.

Seed claimed to be inoculated shall be labeled to show the month and year beyond which the inoculant on the seed is no longer claimed to be effective by a statement such as, ''Inoculant not claimed to be effective after———— (Month and year).''

[32 FR 12779, Sept. 6, 1967]

LABELING VEGETABLE SEEDS

§ 201.25 Contents of the label.

Vegetable seed in packets and in larger containers shall be labeled with the required information in any form that is clearly legible. Any tag used shall be securely attached to the container. The label may contain information in addition to that required by the act, provided such information is not misleading.

[5 FR 31, Jan. 4, 1940]

§ 201.26 Kind, variety, and hybrid.

The label shall bear the name of each kind and variety present as determined in accordance with § 201.34. The name shall not have affixed thereto words or terms that create a misleading impression as to the history or characteristics of kind or variety. If two or more kinds or varieties are present, the percentage of each shall be shown. If any one kind or variety named on the label is ''hybrid'' seed, it shall be so designated on the label. If two or more kinds or varieties are named on the label, each that is hybrid shall be shown as ''hybrid'' on the label. Any kind or variety that is less than 95 percent but more than 75 percent hybrid seed as a result of incompletely controlled pollination in a cross shall be labeled to show (a) the percentage that is hybrid seed or (b) a statement such as ''Contains from 75 percent to 95 percent hybrid seed.'' No one kind or variety of seed shall be labeled as hybrid if it contains less than 75 percent hybrid seed.

[33 FR 10841, July 31, 1968, as amended at 59 FR 64491, Dec. 14, 1994]

§ 201.27 Name of shipper or consignee.

The full name and address of either the shipper, or consignee, shall appear upon the label except that if the name and address of the shipper are not shown, a code designation identifying the shipper shall be shown.

[5 FR 31, Jan. 4, 1940]

§ 201.28 Code designation.

The code designation used in lieu of the full name and address of the person who transports or delivers seed for transportation in interstate commerce shall be approved by the Administrator of the Agricultural Marketing Service or such other person as may be designated by him for the purpose. When used, the code designation shall appear on the label in a clear and legible manner.

[5 FR 31, Jan. 4, 1940, as amended at 13 FR 8731, Dec. 30, 1948; 19 FR 57, Jan. 6, 1954]

§ 201.29 Germination of vegetable seed in containers of 1 pound or less.

Vegetable seeds in containers of 1 pound or less which have a germination equal to or better than the standard set forth in § 201.31 need not be labeled to show the percentage of germination and date of test. Each variety of vegetable seed which has a germination percentage less than the standard set forth in § 201.31 shall have the words ''Below Standard'' clearly shown in a conspicuous place on the label or on the face of the container in type no smaller than 8 points. Each variety which germinates less than the standard shall also be labeled to show the percentage of germination and the percentage of hard seed (if any).

[32 FR 12779, Sept. 6, 1967]

§ 201.29a Germination of vegetable seed in containers of more than 1 pound.

Each variety of vegetable seeds in containers of more than 1 pound shall be labeled to show the percentage of

germination and the percentage of hard seed (if any).

[32 FR 12779, Sept. 6, 1967]

§ 201.30 Hard seed.

The label shall show the percentage of hard seed, if any is present, for any seed required to be labeled as to the percentage of germination, and the percentage of hard seed shall not be included as part of the germination percentage.

[32 FR 12779, Sept. 6, 1967]

§ 201.30a Date of test.

When the percentage of germination is required to be shown, the label shall show the month and year in which the germination test was completed. No more than 5 calendar months shall have elapsed between the last day of the month in which the germination test was completed and the date of transportation or delivery for transportation in interstate commerce, except for seed in hermetically sealed containers in which case no more than 24 calendar months shall have elapsed between the last day of the month in which the germination test was completed prior to packaging and the date of transportation or delivery for transportation in interstate commerce.

[32 FR 12779, Sept. 6, 1967]

§ 201.30b Lot number or other lot identification of vegetable seed in containers of more than 1 pound.

The lot number or other lot identification of vegetable seed in containers of more than 1 pound shall be shown on the label and shall be the same as that used in the records pertaining to the same lot of seed.

[35 FR 6108, Apr. 15, 1970]

§ 201.31 Germination standards for vegetable seeds in interstate commerce.

The following germination standards for vegetable seeds in interstate commerce, which shall be construed to include hard seed, are determined and established under section 403(c) of the act:

	Percent
Artichoke	60
Asparagus	70
Asparagusbean	75
Bean, garden	70
Bean, lima	70
Bean, runner	75
Beet	65
Broadbean	75
Broccoli	75
Brussels sprouts	70
Burdock, great	60
Cabbage	75
Cabbage, tronchuda	70
Cardoon	60
Carrot	55
Cauliflower	75
Celeriac	55
Celery	55
Chard, Swiss	65
Chicory	65
Chinese cabbage	75
Chives	50
Citron	65
Collards	80
Corn, sweet	75
Cornsalad	70
Cowpea	75
Cress, garden	75
Cress, upland	60
Cress, water	40
Cucumber	80
Dandelion	60
Dill	60
Eggplant	60
Endive	70
Kale	75
Kale, Chinese	75
Kale, Siberian	75
Kohlrabi	75
Leek	60
Lettuce	80
Melon	75
Mustard, India	75
Mustard, spinach	75
Okra	50
Onion	70
Onion, Welsh	70
Pak-choi	75
Parsley	60
Parsnip	60
Pea	80
Pepper	55
Pumpkin	75
Radish	75
Rhubarb	60
Rutabaga	75
Sage	60
Salsify	75
Savory, summer	55
Sorrel	65
Soybean	75
Spinach	60
Spinach, New Zealand	40
Squash	75
Tomato	75
Tomato, husk	50
Turnip	80
Watermelon	70

[59 FR 64491, Dec. 14, 1994]

LABELING IN GENERAL

§ 201.31a Labeling treated seed.

(a) *Contents of label.* Any agricultural seed or any mixture thereof or any vegetable seed or any mixture thereof, for seeding purposes, that has been treated shall be labeled in type no smaller than 8 point to indicate that the seed has been treated and to show the name of any substance or a description of any process (other than application of a substance) used in such treatment, in accordance with this section; for example,

Treated with ———— (name of substance or process) or ———— (name of substance or process) treated.

If the substance used in such treatment in the amount remaining with the seed is harmful to humans or other vertebrate animals, the seed shall also bear a label containing additional statements as required by paragraphs (c) and (d) of this section. The label shall contain the required information in any form that is clearly legible and complies with the regulations in this part. The information may be on the tag bearing the analysis information or on a separate tag, or it may be printed in a conspicuous manner on a side or top of the container.

(b) *Name of substance.* The name of any substance as required by paragraph (a) of this section shall be the commonly accepted coined, chemical (generic), or abbreviated chemical name. Commonly accepted coined names are free for general use by the public, are not private trade-marks, and are commonly recognized as names of particular substances; such as thiram, captan, lindane, and dichlone. Examples of commonly accepted chemical (generic) names are: blue- stone, calcium carbonate, cuprous oxide, zinc hydroxide, hexachlorobenzene, and ethyl mercury acetate. The terms ''mercury'' or ''mercurial'' may be used in labeling all types of mercurials. Examples of commonly accepted abbreviated chemical names are: BHC (1, 2, 3, 4, 5, 6- Hexachlorocyclohexane) and DDT (dichloro diphenyl trichloroethane).

(c) *Mercurials and similarly toxic substances.* (1) Seed treated with a mercurial or similarly toxic substance, if any amount remains with the seed, shall be labeled to show a representation of a skull and crossbones at least twice the size of the type used for information required to be on the label under paragraph (a) and shall also include in red letters on a background of distinctly contrasting color a statement worded substantially as follows: ''This seed has been treated with Poison,'' ''Treated with Poison,'' ''Poison treated,'' or ''Poison''. The word ''Poison'' shall appear in type no less than 8 point.

(2) Mercurials and similarly toxic substances include the following:

Aldrin, technical
Demeton
Dieldrin
p-Dimethylaminobenzenediazo sodium sulfonate
Endrin
Ethion
Heptachlor
Mercurials, all types
Parathion
Phorate
Toxaphene
O - O - Diethyl-O-(isopropyl-4-methyl-6-pyrimidyl) thiophosphate
O, O-Diethyl-S-2-(ethylthio) ethyl phosphorodithioate

Any amount of such substances remaining with the seed is considered harmful within the meaning of this section.

(d) *Other harmful substances.* If a substance, other than one which would be classified as a mercurial or similarly toxic substance under paragraph (c) of this section, is used in the treatment of seed, and the amount remaining with the seed is harmful to humans or other vertebrate animals, the seed shall be labeled with an appropriate caution statement in type no smaller than 8 point worded substantially as follows: ''Do not use for food,'' ''Do not use for feed,'' ''Do not use for oil purposes,'' or ''Do not use for food, feed, or oil purposes.'' Any amount of any substance, not within paragraph (c) of this section, used in the treatment of the seed, which remains with the seed is considered harmful within the meaning of this section when the seed is in containers of more than 4 ounces, except that the following substances shall not be deemed harmful when present at a rate less than the number of parts per million indicated:

Allethrin—2 p.p.m.
Malathion—8 p.p.m.
Methoxyclor—2 p.p.m.
Piperonyl butoxide—8 p.p.m. on oat and sorghum and 20 p.p.m. on all other seeds.
Pyrethrins—1 p.p.m. on oat and sorghum and 3 p.p.m. on all other seeds.

[24 FR 3953, May 15, 1959, as amended at 25 FR 8769, Sept. 13, 1960; 30 FR 7888, June 18, 1965]

§201.32 Screenings.

Screenings shipped in interstate commerce, if in containers, shall be labeled in a legible manner with letters not smaller than 18 point type and, if in bulk, shall be invoiced with the words, ''Screenings for processing—not for seeding.''

[5 FR 31, Jan. 4, 1940]

§201.33 Seed in bulk or large quantities; seed for cleaning or processing.

(a) In the case of seed in bulk, the information required under sections 201(a), (b), and (i) of the act shall appear in the invoice or other records accompanying and pertaining to such seed. If the seed is in containers and in quantities of 20,000 pounds or more, regardless of the number of lots included, the information required on each container under sections 201 (a), (b), and (i) of the act need not be shown on each container; *Provided,* That: (1) The omission from each container of a label with the required information is with the knowledge and consent of the consignee prior to the transportation or delivery for transportation of such seed in interstate commerce; (2) each container has stenciled upon it or bears a label containing a lot designation; and (3) the invoice or other records accompanying and pertaining to such seed bear the various statements required for the respective seeds.

(b) Seed consigned to a seed cleaning or processing establishment, for cleaning or processing for seeding purposes, need not be labeled to show the information required on each container under sections 201 (a), (b), and (i) of the act if it is in bulk, or in containers and in quantities of 20,000 pounds or more regardless of the number of lots involved, and the invoice or other records accompanying and pertaining to such seed show that it is ''Seed for processing,'' or, if the seed is in containers and in quantities less than 20,000 pounds and each container bears a label with the words ''Seed for processing.'' If any such seed is later to be labeled as to origin and/or variety, the origin and/or variety as the case may be, shall be shown on the invoice if the seed is in bulk, otherwise, on a label, at the time of transportation to such establishment, except that if it is covered by a declaration of origin and/or variety it will be sufficient if the lot designation appearing in the declaration is placed on the invoice if the seed is in bulk, or on a label if the seed is in containers, regardless of the quantity.

[24 FR 3953, May 15, 1959]

§201.34 Kind, variety, and type; treatment substances; designation as hybrid.

(a) *Indistinguishable seed and treatment substances.* Reasonable precautions to insure that the kind, variety, or type of indistinguishable agricultural or vegetable seeds and names of any treatment substance are properly stated shall include the maintaining of the records described in §201.7 or §201.7a. The examination of the seed and any pertinent facts may be taken into consideration in determining whether reasonable precautions have been taken to insure the kind, variety, or type of seed or any treatment substance on the seed is that which is shown. Reasonable precautions in labeling ryegrass seed as to kind shall include making or obtaining the results of a fluorescence test unless (1) the shortness of the time interval between receipt of the seed lot and the shipment of the seed in interstate commerce, or (2) dormancy of the seeds in the lot, or (3) other circumstances beyond the control of the shipper prevent such action before the shipment is made. Reasonable precautions in labeling ryegrass seed as to kind shall also include keeping separate each lot labeled on the basis of a separate grower's declaration, invoice, or other documents.

(b) *Name of kind.* The name of each kind of agricultural or vegetable seed is the name listed in §201.2 (h) or (i), respectively, except that a name which

has become synonymous through broad general usage may be substituted therefor, provided the name does not apply to more than one kind and is not misleading.

(c) *Hybrid designation.* Seed shall not be designated in labeling as ''hybrid'' seed unless it comes within the definition of ''hybrid'' in § 201.2(y).

(d) *Name of variety.* The name of each variety of agricultural or vegetable seed is the name determined in accordance with the following considerations:

(1) The variety name shall represent a subdivision of a kind, which is characterized by growth, plant, fruit, seed, or other characters by which it can be differentiated from other sorts of the same kind.

(2) Except as otherwise provided in this section, the name of a new variety shall be the name given by the originator or discoverer of the variety, except that in the event the originator or discoverer of a new unnamed variety, at the time seed of the variety is first introduced into channels of commerce of the United States for sale to the public, cannot or chooses not to name the variety, the name of the variety shall be the first name under which the seed is introduced into such commerce. However, if the variety name so provided is in a language not using the Roman alphabet, the variety shall be given a name by the person authorized under this paragraph to name the variety, in a language using the Roman alphabet.

(3) The variety name shall not be misleading. The same variety name shall not be assigned to more than one variety of the same kind of seed.

(4) The status under the Federal Seed Act of a variety name is not modified by the registration of such name as a trademark.

(5) Names of varieties which through broad general usage prior to July 28, 1956 were recognized variety names, except for hybrid seed corn, shall be considered variety names without regard to the principles stated in paragraph (d)(2) of this section.

(6) The variety name for any variety of hybrid seed corn first introduced into commercial channels in the United States for sale prior to October 20, 1951, shall be any name used for such variety in such channels prior to that date. The variety name for any variety of hybrid seed corn first introduced into commercial channels in the United States for sale on or after October 20, 1951, shall be the name assigned in accordance with paragraphs (d)(1) through (4) of this section.

(e) [Reserved]

[20 FR 7928, Oct. 21, 1955]

EDITORIAL NOTE: FOR FEDERAL REGISTER citations affecting § 201.34, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 201.35 Blank spaces.

Blank spaces on the label shall be deemed to imply the word ''None,'' when such interpretation is reasonable.

[5 FR 32, Jan. 4, 1940]

§ 201.36 The words "free" and "none."

The words ''free'' and ''none'' shall be construed to mean that none were found in a test complying with the methods set forth in §§ 201.45–201.52.

[5 FR 32, Jan. 4, 1940]

MODIFYING STATEMENTS

§ 201.36a Disclaimers and nonwarranties.

A disclaimer, nonwarranty, or limited warranty used in any invoice or other labeling, or advertisement shall not directly or indirectly deny or modify any information required by the act or the regulations in this part.

[15 FR 2394, Apr. 28, 1950]

ADVERTISING

§ 201.36b Name of kind and variety; designation as hybrid.

(a) The representation of the name of a kind or kind and variety of seed in any advertisement subject to the act shall be confined to the name of the kind or kind and variety determined in accordance with § 201.34. The name shall not have associated therewith words or terms that create a misleading impression as to the history or characteristics of the kind or kind and variety. Descriptive terms and firm names may be used in kind or variety names provided the descriptive terms or firm names are a part of the name or

variety of seed; for example, Stringless Green Pod, Detroit Dark Red, Black Seeded Simpson and Henderson Bush Lima. Seed shall not be designated as hybrid seed in any advertisement subject to the act unless it comes within the definition of ''hybrid'' in § 201.2(y).

(b) Terms descriptive as to color, shape, size, habit of growth, disease-resistance, or other characteristics of the kind or variety may be associated with the name of the kind or variety provided it is done in a manner which clearly indicates the descriptive term is not a part of the name of the kind or variety; for example, Oshkosh pepper (yellow), Copenhagen Market (round head) cabbage, and Kentucky Wonder (pole) garden bean.

(c) Terms descriptive of quality or origin and terms descriptive of the basis for representations made may be associated with the name of the kind or variety: *Provided,* That the terms are clearly identified as being other than part of the name of the kind or variety; for example, Fancy quality redtop, Idaho origin alfalfa, and Grower's affidavit of variety Atlas sorghum.

(d) Terms descriptive of the manner or method of production or processing the seed (for example, certified, registered, delinted, scarified, treated, and hulled), may be associated with the name of the kind or variety of seed, providing such terms are not misleading.

(e) Brand names and terms taken from trademarks may be associated with the name of the kind or variety of seed as an indication of source: *Provided,* That the terms are clearly identified as being other than a part of the name of the kind or variety; for example, Ox Brand Golden Cross sweet corn. Seed shall not be advertised under a trademark or brand name in any manner that may create the impression that the trademark or brand name is a variety name. If seed advertised under a trademark or brand name is a mixture of varieties and if the variety names are not stated in the advertising, a description similar to a varietal description or a comparison with a named variety shall not be used if it creates the impression that the seed is of a single variety.

[21 FR 4652, June 27, 1956, as amended at 32 FR 12780, Sept. 6, 1967; 59 FR 64491, Dec. 14, 1994]

§ 201.36c Hermetically-sealed containers.

The 5-month limitation on the date of test in §§ 201.22 and 201.30a shall not apply when the following conditions have been met:

(a) The seed was packaged within 9 months after harvest;

(b) The container used does not allow water vapor penetration through any wall, including the seals, greater than 0.05 grams of water per 24 hours per 100 square inches of surface at 100 °F. with a relative humidity on one side of 90 percent and on the other side of 0 percent. Water vapor penetration or WVP is measured by the standards of the U.S. Bureau of Standards as:

gm. H_2O/24 hr./100 sq. in./100 °F./90% RH V.0% RH;

(c) The seed in the container does not exceed the percentage of moisture, on a wet weight basis, as listed below:

Agricultural seeds	Percent
Beet, field	7.5
Beet, sugar	7.5
Bluegrass, Kentucky	6.0
Clover, crimson	8.0
Fescue, red	8.0
Mustard, India	5.0
Ryegrass, annual	8.0
Ryegrass, perennial	8.0
All others	6.0

Vegetable seeds	Percent
Bean, garden	7.0
Bean, lima	7.0
Beet	7.5
Broccoli	5.0
Brussels sprouts	5.0
Cabbage	5.0
Cabbage, Chinese	5.0
Carrot	7.0
Cauliflower	5.0
Celeriac	7.0
Celery	7.0
Chard, Swiss	7.5
Chives	6.5
Collards	5.0
Corn, sweet	8.0
Cucumber	6.0
Eggplant	6.0
Kale	5.0
Kohlrabi	5.0
Leek	6.5
Lettuce	5.5
Melon	6.0
Mustard, India	5.0

Vegetable seeds	Percent
Onion	6.5
Onion, Welsh	6.5
Parsley	6.5
Parsnip	6.0
Pea	7.0
Pepper	4.5
Pumpkin	6.0
Radish	5.0
Rutabaga	5.0
Spinach	8.0
Squash	6.0
Tomato	5.5
Turnip	5.0
Watermelon	6.5
All others	6.0

(d) The container is conspicuously labeled in not less than 8 point type to indicate (1) that the container is hermetically sealed, (2) that the seed has been preconditioned as to moisture content, and (3) the calendar month and year in which the germination test was completed.

(e) The percentage of germination of vegetable seed at the time of packaging was equal to or above the standards in § 201.31.

[32 FR 12780, Sept. 6, 1967, as amended at 59 FR 64491, Dec. 14, 1994]

INSPECTION

§ 201.37 Authorization.

When authorized by the Administrator of the Agriculture Marketing Service, or by such other person as may be designated for the purpose, Federal employees and qualified State officials, for the purposes of the act, may draw samples of, secure information and inspect records pertaining to, and otherwise inspect seeds and screenings subject to the act.

[15 FR 2394, Apr. 28, 1950, as amended at 59 FR 64492, Dec. 14, 1994]

§ 201.38 Importations.

Prior to release into the commerce of the United States, imported seed and screenings shall be inspected as provided in §§ 201.208 and 201.209.

[5 FR 32, Jan. 4, 1940]

SAMPLING IN THE ADMINISTRATION OF THE ACT

§ 201.39 General procedure.

(a) In order to secure a representative sample, equal portions shall be taken from evenly distributed parts of the quantity of seed or screenings to be sampled. Access shall be had to all parts of that quantity. When more than one trierful of seed is drawn from a bag, different paths shall be followed. When more than one handful is taken from a bag, the handfuls shall be taken from well-separated points.

(b) For free-flowing seed in bags or bulk, a probe or trier shall be used. For small free-flowing seed in bags a probe or trier long enough to sample all portions of the bag should be used.

(c) Non-free-flowing seed, such as certain grass seed, uncleaned seed, or screenings, difficult to sample with a proble or trier, shall be sampled by thrusting the hand into the bulk and withdrawing representative portions. The hand is inserted in an open position and the fingers are held closely together while the hand is being inserted and the portion withdrawn.

(d) As the seed or screenings are sampled, each portion shall be examined. If there appears to be a lack of uniformity, the portions shall not be combined into a composite sample but shall be retained as separate samples or combined to form individual-container samples to determine such lack of uniformity as may exist.

(e) When the portions appear to be uniform, they shall be combined to form a composite sample.

[5 FR 32, Jan. 4, 1940, as amended at 10 FR 9950, Aug. 11, 1945; 25 FR 8769, Sept. 13, 1960; 26 FR 10035, Oct. 26, 1961]

§ 201.40 Bulk.

Bulk seeds or screenings shall be sampled by inserting a long probe or thrusting the hand into the bulk as circumstances require in at least seven uniformly distributed parts of the quantity being sampled. At least as many trierfuls or handfuls shall be taken as the minimum which would be required for the same quantity of seed or screenings in bags of a size customarily used for such seed or screenings.

[5 FR 32, Jan. 4, 1940, as amended at 26 FR 10035, Oct. 26, 1961]

§201.41 Bags.

(a) For lots of six bags or less, each bag shall be sampled. A total of at least five trierfuls shall be taken.

(b) For lots of more than six bags, five bags plus at least 10 percent of the number of bags in the lot shall be sampled. (Round off numbers with decimals to the nearest whole number, raising 0.5 to the next whole number.) Regardless of the lot size it is not necessary that more than 30 bags be sampled.

(c) Samples shall be drawn from unopened bags except under circumstances where the identity of the seed has been preserved.

[5 FR 32, Jan. 4, 1940, as amended at 26 FR 10035, Oct. 26, 1961]

§201.42 Small containers.

In sampling seed in small containers that it is not practical to sample as required in §201.41, a portion of one unopened container or one or more entire unopened containers may be taken to supply a minimum size sample, as required in §201.43.

[30 FR 7888, June 18, 1965]

§201.43 Size of sample.

The following are minimum sizes of samples of agricultural seed, vegetable seed and screenings to be submitted for analysis, test, or examination:

(a) Two ounces (57 grams) of grass seed not otherwise mentioned, white or alsike clover, or seeds not larger than these.

(b) Five ounces (142 grams) of red or crimson clover, alfalfa, lespedeza, ryegrass, bromegrass, millet, flax, rape, or seeds of similar size.

(c) One pound (454 grams) of sudangrass, proso millet, hemp, or seeds of similar size.

(d) Two pounds (907 grams) of cereals, sorghum, vetch, or seeds of similar or larger size.

(e) Two quarts (2.2 liters) of screenings.

(f) Vegetable seed samples shall consist of at least 400 seeds.

(g) Coated seed for a purity analysis shall consist of at least 7,500 seed units. Coated seed for noxious-weed seed examination shall consist of at least 30,000 seed units. Coated seed for germination test only shall consist of at least 1,000 seed units.

[10 FR 9950, Aug. 11, 1945, as amended at 15 FR 2394, Apr. 28, 1950; 59 FR 64492, Dec. 14, 1994]

§201.44 Forwarding samples.

Before being forwarded for analysis, test, or examination, the containers of samples shall be properly sealed and identified in such manner as may be prescribed by AMS. Samples of coated seed shall be forwarded in firmly packed crush-proof and moisture-proof containers.

[59 FR 64492, Dec. 14, 1994]

PURITY ANALYSIS IN THE ADMINISTRATION OF THE ACT

§201.45 Obtaining the working sample.

(a) The working sample on which the actual analysis is made shall be taken from the submitted sample in such a manner that it will be representative.

(b) The sample shall be repeatedly divided to the weight to be used for the working sample. Some form of efficient mechanical divider should be used. To avoid damaging large seeds and coated seeds, a divider should be used which will prevent the seeds from falling great distances onto hard surfaces. In case the proper mechanical divider cannot be used or is not available, the sample shall be thoroughly mixed and placed in a pile and the pile shall be repeatedly divided into halves until a sample of the desired weight remains.

[5 FR 32, Jan. 4, 1940, as amended at 20 FR 7929, Oct. 21, 1955; 25 FR 8769, Sept. 13, 1960; 59 FR 64492, Dec. 14, 1994]

§201.46 Weight of working sample.

(a) *Unmixed seed.* The working samples for purity analysis and noxiousweed seed examination of unmixed seed shall be at least the weights set forth in table 1.

(b) *Mixtures consisting of one predominant kind of seed or a group of kinds of similar size.* The weights of the purity and noxious-weed seed working samples in this category shall be determined by the kind or group of kinds which compromise more than 50 percent of the sample.

(c) *Mixtures consisting of two or more kinds or groups of kinds of different sizes, none of which comprise over 50 percent of the sample.* The weights of the purity working samples in this category shall be the weighted averages (to the nearest half gram) of the weights listed in table 1 for each of the kinds which comprise the sample determined by the following method: (1) Multiply the percentage of each component in the mixture (rounded off to the nearest whole number) by the sample sizes specified in column 2, table 1, (2) add all these products, (3) total the percentages of all components of the mixtures, and (4) divide the sum in paragraph (c)(2) of this section by the total in paragraph (c)(3) of this section. If the approximate percentage of the components of a mixture are not known they may be estimated. The weight of the noxious-weed seed working sample shall be determined by multiplying the weight of the purity working sample by 10 or by calculating the weighted average in the same manner described above for the purity working sample.

(d) Coated seed.

(1) Unmixed coated seed. Due to variation in the weight of coating materials, the size or weight of the working sample shall be determined separately for each lot. The weight of the working sample shall be determined by weighing 100 completely coated units and calculating the weight of 2,500 coated units for the purity analysis and 25,000 coated units for the noxious-weed seed examination.

(2) Mixtures of coated seed. The working weight shall be determined in the following manner:

(i) Calculate the weight of the working sample to be used for the mixture under consideration as though the sample were not coated by following paragraph (b) or (c) of this section.

(ii) Determine the amount of coating material on 100 coated units by weighing the coated units. Remove the coating material using the methods described in §§ 201.51b (c) and (d). Calculate the percentage of coating material using the following formulas:

Weight of coating material = weight of 100 coated units − weight of 100 decoated units;

The percentage of coating material = weight of the coating material divided by the weight of 100 coated units × 100%.

(iii) The weight of the working sample shall be the product of the weight calculated in paragraph (b)(2)(i) of this section multiplied by 100%, divided by 100% minus the percentage of coating material calculated in paragraph (b)(2)(ii) of this section.

TABLE 1—WEIGHT OF WORKING SAMPLE

Name of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious-weed seed examination (grams)	Approximate number of seeds per gram
Agricultural Seed			
Agrotricum	65	500	39
Alfalfa	5	50	500
Alfilaria	5	50	440
Alyceclover	5	50	665
Bahiagrass:			
Var. Pensacola	5	50	600
All other vars.	7	50	365
Barley	100	500	30
Barrelclover	10	100	250
Bean:			
Adzuki	200	500	11
Field	500	500	4
Mung	100	500	24
Beet, field	50	500	55
Beet, sugar	50	500	55
Beggarweed, Florida	5	50	440
Bentgrass:			
Colonial	0.25	2.5	13,000
Creeping	0.25	2.5	13,515
Velvet	0.25	2.5	18,180
Bermudagrass	1	10	3,930

TABLE 1—WEIGHT OF WORKING SAMPLE—Continued

Name of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious-weed seed examination (grams)	Approximate number of seeds per gram
Bermudagrass, giant	1	10	2,950
Bluegrass:			
Annual	1	10	2,635
Bulbous	4	40	585
Canada	0.5	5	5,050
Glaucantha	1	10	.....
Kentucky	1	10	3,060
Nevada	1	10	2,305
Rough	0.5	5	4,610
Texas	1	10	2,500
Wood	0.5	5	4,330
Bluejoint	0.5	5	8,461
Bluestem:			
Big	7	70	320
Little	5	50	525
Sand	10	100	215
Yellow	1	10	1,945
Bottlebrush-squirreltail	9	90	300
Brome:			
Field	5	50	465
Meadow	13	130	190
Mountain	20	200	140
Smooth	7	70	315
Broomcorn	40	400	60
Buckwheat	50	500	45
Buffalograss:			
(Burs)	20	200	110
(Caryopses)	3	30	740
Buffelgrass:			
(Fascicles)	6	66	365
(Caryopses)	2	20	1,940
Burclover, California:			
(in bur)	50	500	.....
(out of bur)	7	70	375
Burclover, spotted			
(in bur)	50	500	50
(out of bur)	5	50	550
Burnet, little	25	250	110
Buttonclover	7	70	365
Canarygrass	20	200	150
Canarygrass, reed	2	20	1,185
Carpetgrass	1	10	2,230
Castorbean	500	500	5
Chess, soft	5	50	555
Chickpea	500	500	2
Clover:			
Alsike	2	20	1,500
Arrowleaf	4	40	705
Berseem	5	50	455
Cluster	1	10	2,925
Crimson	10	100	330
Kenya	2	20	
Ladino	2	20	1,935
Lappa	2	20	1,500
Large hop	1	10	5,435
Persian	2	20	1,415
Red	5	50	600
Rose	7	70	360
Small hop	2	20	1,950
Strawberry	5	50	635
Sub	25	250	120
White	2	20	1,500
Corn:			
Field	500	500	3
Pop	500	500	3
Cotton	300	500	8
Cowpea	300	500	8
Crambe	25	250	.....

TABLE 1—WEIGHT OF WORKING SAMPLE—Continued

Name of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious-weed seed examination (grams)	Approximate number of seeds per gram
Crested dogtail	2	20	1,900
Crotalaria:			
Lance	7	70	375
Showy	25	250	80
Slenderleaf	10	100	205
Striped	10	100	215
Sunn	75	500	35
Crownvetch	10	100	305
Dallisgrass	4	40	620
Dichondra	5	50	470
Dropseed, sand	0.25	2.5	12,345
Emmer	100	500	25
Fescue:			
Chewings	3	30	900
Hair	1	10	.....
Hard	2	20	1,305
Meadow	5	50	495
Red	3	30	900
Sheep	2	20	1,165
Tall	5	50	455
Flax	15	150	180
Galletagrass:			
(Other than caryopses)	10	100	260
(Caryopses)	5	50	580
Grama:			
Blue	2	20	1,595
Side-oats:			
(Other than caryopses)	6	60	350
(Caryopses)	2	20	1,605
Guar	75	500	35
Guineagrass	2	20	2,205
Hardinggrass	3	30	750
Hemp	50	500	45
Indiangrass, yellow	7	70	395
Indigo, hairy	7	70	435
Japanese lawngrass	2	20	1,325
Johnsongrass	10	100	265
Kenaf	50	500	.....
Kochia, forage	2	20	1,070
Kudzu	25	250	80
Lentil	120	500	14–23
Lespedeza:			
Korean	5	50	525
Sericea	3	30	820
Siberian	3	30	820
Striate	5	50	750
Lovegrass, sand	1	10	3,585
Lovegrass, weeping	1	10	3,270
Lupine:			
Blue	500	500	7
White	500	500	7
Yellow	300	500	9
Manilagrass	2	20	.....
Meadow foxtail	3	30	893
Medic, black	5	50	585
Milkvetch	9	90	270
Millet:			
Browntop	8	80	315
Foxtail	5	50	480
Japanese	9	90	315
Pearl	15	150	180
Proso	15	150	185
Molassesgrass	0.5	5	7,750
Mustard:			
Black	2	20	1,255
India	5	50	625
White	15	150	160
Napiergrass	5	50	.....

TABLE 1—WEIGHT OF WORKING SAMPLE—Continued

Name of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious-weed seed examination (grams)	Approximate number of seeds per gram
Needlegrass, green	7	70	370
Oat	75	500	35–50
Oatgrass, tall	6	60	417
Orchardgrass	3	30	945
Panicgrass, blue	2	20	1,370
Panicgrass, green	2	20	1,305
Pea, field	500	500	4
Peanut	500	500	1–3
Rape:			
Annual	7	70	345
Bird	7	70	425
Turnip	5	50	535
Winter	10	100	230
Redtop	0.25	2.5	10,695
Rescuegrass	20	200	115
Rhodesgrass	1	10	4,725
Rice	50	500	65
Ricegrass, Indian	7	70	355
Roughpea	75	500	40
Rye	75	500	40
Rye, mountain	28	280	90
Ryegrass:			
Annual	5	50	420
Intermediate	8	80	338
Perennial	5	50	530
Wimmera	5	50	.....
Safflower	100	500	30
Sagewort, Louisiana	0.5	5	8,900
Sainfoin	50	500	50
Saltbush, fourwing	15	150	165
Sesame	7	70	360
Sesbania	25	250	105
Smilo	2	20	2,010
Sorghum	50	500	55
Sorghum almum	15	150	150
Sorghum-sudangrass	65	500	38
Sorgrass[1]	15	150	135
Sourclover	5	50	660
Soybean	500	500	6–13
Spelt	100	500	25
Sudangrass	25	250	100
Sunflower	100	500	.....
Sweetclover:			
White	5	50	570
Yellow	5	50	570
Sweet vernalgrass	2	20	1,600
Sweetvetch, northern	19	190	130
Switchgrass	4	40	570
Timothy	1	10	2,565
Timothy, turf	1	10	2,565
Tobacco	0.5	5	15,625
Trefoil:			
Big	2	20	1,945
Birdsfoot	3	30	815
Triticale	100	500	.....
Vaseygrass	3	30	970
Veldtgrass	4	40	655
Velvetbean	500	500	2
Velvetgrass	1	10	3,360
Vetch:			
Common	150	500	19
Hairy	75	500	35
Hungarian	100	500	24
Monantha	100	500	.....
Narrowleaf	50	500	60
Purple	100	500	22
Woollypod	100	500	25
Wheat:			

TABLE 1—WEIGHT OF WORKING SAMPLE—Continued

Name of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious-weed seed examination (grams)	Approximate number of seeds per gram
Common	100	500	25
Club	100	500	25
Durum	100	500	25
Polish	100	500	25
Poulard	100	500	25
Wheat x Agrotricum	65	500	38
Wheatgrass:			
Beardless	8	80	275
Fairway crested	4	40	685
Standard crested	5	50	425
Intermediate	15	150	175
Pubescent	15	150	180
Siberian	5	50	.....
Slender	7	70	295
Streambank	10	50	370
Tall	15	150	165
Western	10	100	250
Wildrye:			
Basin	8	80	317
Canada	11	110	190
Russian	6	60	360
Vegetable Seed			
Artichoke	100	500	24
Asparagus	100	500	25
Asparagusbean	300	500	8
Bean:			
Garden	500	500	4
Lima	500	500	2
Runner	500	500	1
Beet	50	300	60
Broadbean	500	500	.....
Broccoli	10	50	315
Brussels sprouts	10	50	315
Burdock, great	15	150	.....
Cabbage	10	50	315
Cabbage, Chinese	5	50	635
Cabbage, tronchuda	10	100	.....
Cardoon	100	500	.....
Carrot	3	50	825
Cauliflower	10	50	315
Celeriac	1	25	2,520
Celery	1	25	2,520
Chard, Swiss	50	300	60
Chicory	3	50	940
Chives	5	50	.....
Citron	200	500	11
Collards	10	50	315
Corn, sweet	500	500	.....
Cornsalad:			
Vars. Fullhearted and Dark Green Fullhearted	5	50	.....
All other vars	10	50	380
Cowpea	300	500	8
Cress:			
Garden	5	50	425
Upland	2	35	1,160
Water	1	25	5,170
Cucumber	75	500	40
Dandelion	2	35	1,240
Dill	3	50	800
Eggplant	10	50	230
Endive	3	50	940
Gherkin, West India	16	160	153
Kale	10	50	315
Kale, Chinese	10	50	.....
Kale, Siberian	8	80	325
Kohlrabi	10	50	315
Leek	7	50	395

TABLE 1—WEIGHT OF WORKING SAMPLE—Continued

Name of seed	Minimum weight for purity analysis (grams)	Minimum weight for noxious-weed seed examination (grams)	Approximate number of seeds per gram
Lettuce	3	50	890
Melon	50	500	45
Mustard, India	5	50	625
Mustard, spinach	5	50	535
Okra	100	500	19
Onion	7	50	340
Onion, Welsh	10	50	.....
Pak-choi	5	50	635
Parsley	5	50	650
Parsnip	5	50	430
Pea	500	500	3
Pepper	15	150	165
Pumpkin	500	500	5
Radish	30	300	75
Rhubarb	50	300	60
Rutabaga	5	50	430
Sage	25	150	120
Salsify	50	300	65
Savory, summer	2	35	1,750
Sorrel	2	35	1,080
Soybean	500	500	6–13
Spinach	25	150	100
Spinach, New Zealand	200	500	13
Squash	200	500	14
Tomato	5	50	405
Tomato, husk	2	35	1,240
Turnip	5	50	535
Watermelon	200	500	11

[1] Rhizomatous derivatives of a johnsongrass x sorghum cross or a johnsongrass x sudangrass cross.

[25 FR 8769, Sept. 13, 1960, and 30 FR 7888, June 18, 1965, as amended at 32 FR 12780, Sept. 6, 1967; 35 FR 6108, Apr. 15, 1970; 41 FR 20156, May 17, 1976; 46 FR 53635, Oct. 29, 1981; 59 FR 64492, Dec. 14, 1994]

§ 201.47 Separation.

(a) The working sample shall be weighed in grams to four significant figures and shall then be separated into four parts: (1) Kind or variety to be considered pure seed, (2) other crop seed, (3) weed seed, and (4) inert matter. The components shall be weighed in grams to the same number of decimal places as the working sample. The percentage of each part shall be determined to two decimal places.

(b) Aids for the classification of pure seed, other crop seed, weed seed, and inert matter may include visual examination, use of transmitted light (diaphanoscope), or specific gravity (seed blowers). Specific instructions for classification of the various components are given in §§ 201.47a to 201.51, inclusive.

(c) The components shall be weighed and percentages calculated as follows:

(1) For sample sizes less than 25 grams, all four components shall be weighed; the percentages shall be based on the sum of these weights and not on the original weight. The sum of these weights shall be compared with the original weight of the working sample as a check against the loss of material, or other errors.

(2) For sample sizes of 25 grams or more, the components—other crop seed, weed seed, and inert matter—shall be weighed separately and their percentages determined by dividing these weights by the original weight of the working sample. The pure seed need not be weighed; its percentage may be determined by subtracting the sum of the percentages of the other three components from 100.

(d) When the working sample consists of two or more similar kinds or varieties which would be difficult to separate in the entire sample, it is permissible to weigh the similar kinds or varieties together as one component and make the separation on a reduced portion of the sample. At least 400 seeds or an equivalent weight shall be taken indiscriminately from the pure seed component and the separation made on this portion. The proportion of each kind present shall then be determined by weight and from this the percentage in the entire sample shall be calculated.

(e) The Uniform Blowing Procedure described in §201.51a(a) shall be used for the separation of pure seed and inert matter in seeds of Kentucky bluegrass, Canada bluegrass, rough bluegrass, Pensacola variety of bahiagrass, orchardgrass, side-oats grama, and blue grama.

(f) Procedures for purity analysis for coated seed are given in §201.51b.

[25 FR 8770, Sept. 13, 1960, as amended at 30 FR 7890, June 18, 1965; 46 FR 53635, Oct. 29, 1981; 59 FR 64497, Dec. 14, 1994]

§201.47a Seed unit.

The seed unit is the structure usually regarded as a seed in planting practices and in commercial channels. The seed unit may consist of one or more of the following structures:

(a) True seeds;

(b) For the grass family:

(1) Caryopses and single florets;

(2) Multiple florets and spikelets in tall oatgrass (Arrhenatherum elatius), oat (Avena spp.), gramas (Bouteloua spp.), rhodesgrass (Chloris gayana), barley (Hordeum vulgare), and bluegrass (Poa spp.);

(3) Entire spikelets in bahiagrass, bentgrasses, dallisgrass, guineagrass, browntop millet, foxtail millet, proso millet, panicgrasses, redtop, rice, switchgrass, and vaseygrass. Entire spikelets which may have attached rachis segments, pedicels, and sterile spikelets in big bluestem, little bluestem, sand bluestem, yellow bluestem, bottlebrush-squirreltail, broomcorn, yellow indiangrass, johnsongrass, sorghum, sorghum-sudangrass, sorghum almum, sorgrass, and sudangrass;

(4) Spikelet groups:

(i) Spikelet groups that disarticulate as a unit in galletagrass;

(ii) Spikelet groups that disarticulate as units with attached rachis and internodes bluestems, side-oats grama, and yellow indiangrass;

(5) Fascicles of buffelgrass (Cenchrus ciliaris) consisting of bristles and spikelets;

(6) Burs of buffalograss (Buchloe dactyloides);

(7) Bulblets of bulbous bluegrass (Poa bulbosa);

(8) Multiple units as defined in §201.51a(b)(1).

(c) Dry indehiscent fruits in the following plant families: Buckwheat (Polygonaceae), sunflower (Compositae), geranium (Geraniaceae), goosefoot (Chenopodiaceae), and valerian (Valerianaceae);

(d) One- and two-seeded pods of small-seeded legumes (Leguminosae), burs of the burclovers (Medicago arabica, M. polymorpha), and pods of peanuts (Arachis hypogaea). (This does not preclude the shelling of small-seeded legumes for purposes of identification.) Pods of legumes normally containing more than two seeds, when occurring incidentally in the working sample, should be hulled if the kind is hulled when marketed;

(e) Fruits or half fruits in the carrot family (Umbelliferae);

(f) Nutlets in the following plant families: Borage (Boraginaceae), mint (Labiatae), and vervain (Verbenaceae);

(g) ''Seed balls'' or portions thereof in multigerm beets, and fruits with accessory structures such as occur in other Chenopodiaceae and New Zealand spinach. For forage kochia refer to §201.48(j) and §201.51(a)(7).

[46 FR 53636, Oct. 29, 1981, as amended at 59 FR 64497, Dec. 14, 1994]

§201.47b Working samples.

The purity working sample is the sample on which the purity analysis is made. The noxious-weed seed working sample is the sample on which the noxious-weed seed examination is made.

[20 FR 7930, Oct. 21, 1955]

§201.48 Kind or variety considered pure seed.

The pure seed shall include all seeds of each kind or each kind and variety under consideration present in excess of 5 percent of the whole. Seeds of kinds or kinds and varieties present to the extent of 5 percent or less of the whole may be considered pure seed if shown on the label as components of a mixture in amounts of 5 percent or less. The following shall be included with the pure seed:

(a) Immature or shriveled seeds and seeds that are cracked or injured. For seeds of legumes (Leguminosae) and crucifers (Cruciferae) with the seed coats entirely removed refer to §201.51(a)(1);

(b) Pieces of seeds which are larger than one-half of the original size. For separated cotyledons of legume seeds refer to §201.51(a)(2);

(c) Insect-damaged seeds, provided that the damage is entirely internal, or that the opening in the seed coat is not sufficiently large so as to allow the size of the remaining mass of tissue to be readily determined. Weevil-infested vetch seeds, irrespective of the amount of insect damage, are to be considered pure seed, unless they are broken pieces one-half or less than the original size. For classification of broken pieces of seed units one-half or less than the original size, refer to §201.51(a)(2). Refer to §201.51(a)(3) for chalcid-damaged seeds;

(d) Seeds that have started to germinate;

(e) Seeds of the cucurbit family (Cucurbitaceae) and the nightshade family (Solanaceae) whether they are filled or empty;

(f) Intact fruits, whether or not they contain seed, of species belonging to the following families: Sunflower (Compositae), buckwheat (Polygonaceae), carrot (Umbelliferae), valerian (Valerianaceae), mint (Labiatae) and other families in which the seed unit may be a dry, indehiscent one-seeded fruit. For visibly empty fruits, refer to inert matter, §201.51(a)(6);

(g) Seed units of the grass family listed in §201.47a(b) (1) through (5) if a caryopsis with some degree of endosperm development can be detected in the units, either by slight pressure or by examination over light. Species in which determination of endosperm development is not necessary are listed in paragraphs (g) (1) and (2) of this section. Refer to §§201.48(h) and 201.51(a)(5) when nematode galls and fungal bodies have replaced the caryopsis in seed units. The following procedures apply to determine pure seed in the grass families listed below:

(1) Intact burs of buffalograss (Buchloe dactyloides) shall be considered pure seed whether or not a caryopsis is present. Refer to §201.51(a)(6) for burs which are visibly empty.

(2) The Uniform Blowing Procedure described in §201.51a(a) shall be used to determine classification of florets into pure seed or inert matter for Kentucky bluegrass, Canada bluegrass, rough bluegrass, Pensacola variety of bahiagrass, side-oats grama, blue grama, and orchardgrass.

(3) Special purity procedures for smooth brome, chewings fescue, red fescue, orchardgrass, fairway crested wheatgrass, standard crested wheatgrass, intermediate wheatgrass, pubescent wheatgrass, tall wheatgrass, and western wheatgrass are listed in §201.51a(b).

(4) For methods of determining pure seed percentages of annual and perennial ryegrass, refer to §§201.58(b)(10) and 201.58a(a).

(h) Seed units with nematode galls, fungal bodies (i.e. ergot, other sclerotia, and smut) and spongy or corky caryopses that are entirely enclosed within the seed unit. Refer to §201.51(c)(1) for inert matter classification.

(i) Seed units of beet and other Chenopodiaceae, and New Zealand spinach. Refer to §201.47a(g) and §201.51(a)(6) for definitions of seed units and inert matter, respectively.

(j) Seed units of forage kochia that are retained on a 1 mm opening square-hole sieve, when shaken for 30 seconds. For inert matter, refer to §201.51(a)(7).

[46 FR 53636, Oct. 29, 1981, as amended at 59 FR 64497, Dec. 14, 1994]

§201.49 Other crop seed.

(a) Seeds of plants grown as crops (other than the kind(s) and variety(ies)

included in the pure seed) shall be considered other crop seeds, unless recognized as weed seeds by applicable laws, or regulations, or by general usage. All interpretations and definitions for ''pure seed'' in § 201.48 shall also apply in determining whether seeds are ''other crop seed'' or ''inert matter'' with the following two exceptions which may be applied as acceptable alternatives:

(1) Uniform Blowing Procedure in § 201.51a(a) for kinds listed in § 201.47(e) may be disregarded. If disregarded, all seed units (as defined in § 201.47a) for these kinds found in the working sample shall be manually separated into pure seed and inert matter. Only units containing at least one caryopsis with some degree of endosperm development which can be detected either by slight pressure or by examination over light are considered other crop seed.

(2) Multiple Unit Procedure in § 201.51a(b) for kinds listed in § 201.48(g)(3) may be disregarded. If disregarded, all multiple units and single units (as defined in § 201.51a(b)) for these kinds found in the working sample shall be manually separated into single florets. Each floret containing a caryopsis with some degree of endosperm development, which can be detected either by slight pressure or examination over light, is considered other crop seed. Empty florets and glumes, if present, are considered inert matter. Refer to § 201.51(a)(4).

(b) [Reserved]

[59 FR 64498, Dec. 14, 1994; 60 FR 2493, Jan. 10, 1995]

§ 201.50 Weed seed.

Seeds (including bulblets or tubers) of plants shall be considered weed seeds when recognized as weed seeds by the law or rules and regulations of the State into which the seed is offered for transportation or transported; or by the law or rules and regulations of Puerto Rico, Guam, or District of Columbia into which transported, or District of Columbia in which sold; or found by the Secretary of Agriculture to be detrimental to the agricultural interests of the United States, or any part thereof. Damaged weed seeds and immature seedlike structures, as described in § 201.51(b), shall be considered inert matter. Weed seeds, as defined above in this section, requiring further separation into weed seed and inert matter components are as follows:

(a) Capsules and clusters of seeds of poverty rush (Juncus tenuis), and other species of rush (Juncus spp.) having seeds of similar size, are classed as weed seeds. For the classification of individual seeds of rush (Juncus spp.) refer to § 201.51(b)(9);

(b) For species having seeds larger than rush (Juncus spp.), the individual seeds are to be removed from fruiting structures such as pods and heads. The seeds are classified as weed seed and the remaining fruiting structures classified as inert matter.

(c) Wild onion and wild garlic (*Allium* spp.) bulblets that have any part of the husk remaining and are not damaged at the basal end are considered weed seeds regardless of size. Bulblets that are completely devoid of husk, and are not damaged at the basal end, and are retained by a 1/13-inch (1.9 mm) round-hole sieve are considered weed seeds. For wild onion and wild garlic (*Allium* spp.) bulblets classed as inert matter, refer to § 201.51(b)(5).

[46 FR 53636, Oct. 29, 1981, as amended at 59 FR 64498, Dec. 14, 1994]

§ 201.51 Inert matter.

Inert matter shall include seeds and seed-like structures from both crop and weed plants and other material not seeds as follows:

(a) Seeds and seed-like structures from crop plants:

(1) Seeds of legumes (Leguminosae) and crucifers (Cruciferae) with the seed coats entirely removed. Refer to § 210.48(a) for pure seed classification.

(2) Pieces of broken and damaged seed units, including those that are insect damaged, which are one-half the original size or less. If greater than one-half, refer to § 201.48(b) and (c) for pure seed classification. Also included as inert matter are separated cotyledons of legumes, irrespective of whether or not the radicle-plumule axis and/or more than one-half of the seed coat may be attached.

(3) Chalcid-damaged seeds (puffy, soft, or dry and crumbly) of alfalfa, red clover, crimson clover, and similar

kinds of small seeded legumes. Refer to §201.48(c) for pure seed classification.

(4) Glumes and empty florets except as stated under pure seed. Refer to §201.48 (g) and (h) for pure seed classification.

(5) Seed units with nematode galls or fungal bodies (smut, ergot, and other sclerotia) that are not entirely enclosed within the seed unit. Refer to §201.48(h) for pure seed classification.

(6) Broken seed units of Chenopodiaceae and fruit portions or fragments of monogerm beets, New Zealand spinach, buffalograss, and families in which the seed unit is a dry indehiscent one-seeded fruit that visibly do not contain a seed. Refer to §201.48 (f), (g)(1), (i), and (j) for pure seed classification.

(7) Seed units of forage kochia that pass through a 1 mm opening, square-hole sieve, when shaken for 30 seconds.

(8) The thin pericarp (fruit wall), if present on seeds of northern sweetvetch.

(b) Seeds and seed-like structures from weed plants, which by visual examination (including the use of light or dissection), can be determined to be within the following categories:

(1) Damaged seed (other than grasses) with over one-half of the embryo missing.

(2) Grass florets and caryopses classed as inert:

(i) Glumes and empty florets of weedy grasses;

(ii) Damaged grass caryopses, including free caryopses, with over one-half the root-shoot axis missing (the scutellum excluded);

(iii) Immature free caryopses devoid of embryo and/or endosperm;

(iv) Immature florets of quackgrass (Agropyron repens) in which the caryopses are less than one-third the length of the palea. The caryopsis is measured from the base of the rachilla;

(v) Free caryopses of quackgrass (A. repens) that are 2 mm or less in length.

(3) Seeds of legumes and species of Brassica with the seed coats entirely removed.

(4) Immature seed units, devoid of both embryo and endosperm, such as occur in but not limited to the following plant families: Sedge (Cyperaceae), buckwheat (Polygonaceae), morning glory (Convolvulaceae), nightshade (Solanaceae), puncturevine (Zygophyllaceae) and sunflower (Compositae). Cocklebur (Xanthium spp.) burs are to be dissected to determine whether or not seeds are present.

(5) Wild onion and wild garlic (Allium spp.) bulblets:

(i) Bulblets which are completely devoid of the husk and pass through a 1/13th-inch, round-hole sieve.

(ii) Bulblets which show evident damage to the basal end, whether husk is present or absent. Refer to §201.50(c) for wild onion and wild garlic (Allium spp.) bulblets classed as weed seeds.

(6) Dodder (Cuscuta spp.): Seeds devoid of embryos and seeds which are ashy gray to creamy white in color are inert matter. Seeds should be sectioned when necessary to determine if an embryo is present as when seeds have a normal color but are slightly swollen, dimpled or have minute holes.

(7) Buckhorn (Plantago lanceolata): Black seeds, with no brown color evident, whether shriveled or plump; the color of questionable seeds shall be determined by use of a stereoscopic microscope with magnification of approximately 10× and a fluorescent lamp with two 15-watt daylight-type tubes.

(8) Ragweed (Ambrosia spp.): Seed with both the involucre and pericarp absent.

(9) Individual seeds of Juncus species shall be left in the inert matter and their presence recorded under ''weed seeds.''

(c) Other matter that is not seed:

(1) Free nematode galls or fungal bodies such as smut, ergot, and other sclerotia.

(2) Soil particles, sand, stone, chaff, stems, leaves, flowers, loose coating material, and any other foreign material.

(3) Coating material removed from coated seed by washing. Refer to §201.51b(c).

[46 FR 53637, Oct. 29, 1981; 46 FR 58059, Nov. 30, 1981; 59 FR 64498, Dec. 14, 1994]

§201.51a Special procedures for purity analysis.

(a) The Uniform Blowing Procedure shall be used for the separation of pure seed and inert matter in the following: Kentucky bluegrass, Canada bluegrass,

rough bluegrass, Pensacola variety of bahiagrass, orchardgrass, blue grama, and side-oats grama.

(1) When kinds listed in this section appear in mixtures they shall be separated from other kinds before using the Uniform Blowing Procedure.

(2) To determine the blowing point for these procedures, individual calibration samples for Kentucky bluegrass, orchardgrass, and Pensacola variety of bahiagrass shall be used. The calibration sample for Kentucky bluegrass shall be used for Canada bluegrass, rough bluegrass, blue grama, and side-oats grama.

(i) The blowing point for Canada bluegrass shall be the same as the blowing point determined for Kentucky bluegrass.

(ii) The blowing point for rough bluegrass shall be a factor of 0.82 (82 percent) of the blowing point determined for Kentucky bluegrass. The 0.82 factor is restricted to the General-type seed blower.

(iii) The blowing point for blue grama shall be a factor of 1.157 of the blowing point determined for Kentucky bluegrass. Before blowing, extraneous material that will interfere with the blowing process shall be removed. The sample to be blown shall be divided into four approximately equal parts and each blown separately. The 1.157 factor is restricted to the General-type seed blower.

(iv) The blowing point for side-oats grama shall be a factor of 1.480 of the blowing point determined for Kentucky bluegrass. Before blowing, extraneous material that will interfere with the blowing process shall be removed. The sample to be blown shall be divided into four approximately equal parts and each part blown separately. The 1.480 factor is restricted to the General-type seed blower.

(3) Calibration samples and instructions are available on loan through the Seed Regulatory and Testing Branch, LS, AMS, Building 306, Room 213, Beltsville, Maryland 20705.

(4) The calibration samples shall be used to establish a blowing point prior to proceeding with the separation of pure seed and inert matter for these kinds. After completing the blowing procedure, remove all weed and other crop seeds from the light portion and add these to the weed or other crop separation, as appropriate. The remainder of the light portion shall be considered inert matter. Remove all weed and other crop seeds and other inert matter (stems, leaves, dirt) from the heavy portion and add these to the weed seed, other crop seed, or inert matter separations, as appropriate. The remainder of the heavy portion shall be considered pure seed.

(5) With orchardgrass, after the blowing, proceed with the multiple unit procedure.

(b) The Multiple Unit Procedure of determining the pure seed fraction shall be used only for the kinds included in the following table when multiple units are present in a sample. These methods are applicable to the kinds listed when they occur in mixtures or singly. Any single unit without attached structures, as described below, shall be considered a single unit. Multiple units and single units for the kinds listed shall remain intact. The attached glumes and fertile or sterile florets shall not be removed from the fertile floret.

(1) A multiple unit is a seed unit that includes one or more structures as follows (the length of the awn shall be disregarded when determining the length of a fertile floret or an attached structure):

(i) An attached sterile or fertile floret that extends to or beyond the tip of a fertile floret;

(ii) A fertile floret with basally attached glume, glumes, or basally attached sterile floret of any length;

(iii) A fertile floret with two or more attached sterile and/or fertile florets of any length.

(2) Procedure for determination of multiple units:

(i) For the single kind: determine the percentage of single units present, based on the total weight of single units and multiple units. Apply the appropriate factor, as determined from the following table, to the weight of the multiple units and add that portion of the multiple unit weight to the weight of the single units. The remaining multiple unit weight shall be added to the weight of the inert matter.

(ii) For mixtures that include one or more of the kinds in the following table, determine the percentage of single units, based on the total weight of single units and multiple units, for each kind. Apply the appropriate factor as determined from the following table, to the weight of multiple units of each kind.

TABLE OF FACTORS TO APPLY TO MULTIPLE UNITS [a]

Percent of single units of each kind	Chewings fescue	Red fescue	Orchardgrass	Crested wheatgrass [b]	Pubescent wheatgrass	Intermediate wheatgrass	Tall wheatgrass [c]	Western wheatgrass [c]	Smooth brome
50 or below	91	80	80	70	66	72	—	—	72
50.01–55.00	91	81	81	72	67	74	—	—	74
55.01–60.00	91	82	81	73	67	75	—	—	75
60.01–65.00	91	83	82	74	67	76	—	—	76
65.01–70.00	91	84	82	75	68	77	—	60	78
70.01–75.00	91	86	82	76	68	78	—	66	79
75.01–80.00	91	87	83	77	69	79	50	67	81
80.01–85.00	91	88	83	78	69	80	55	68	82
85.01–90.00	91	89	83	79	69	81	65	70	83
90.01–100.00	91	90	84	79	70	82	70	74	85

[a] The factors represent the percentages of the multiple unit weights which are considered pure seed. The remaining percentage is regarded as inert matter.
[b] Includes both standard crested wheatgrass and fairway crested wheatgrass.
[c] Dashes in table indicate that no factors are available at the levels shown.

[59 FR 64498, Dec. 14, 1994]

§ 201.51b Purity procedures for coated seed.

(a) The working sample for coated seed is obtained as described in § 201.46(d) (1) and (2), and weighed in grams to four significant figures.

(b) Any loose coating material shall be sieved, weighed, and included with the inert matter component.

(c) Coating material is removed from the seed by washing with water or other solvents such as, but not limited to, dilute sodium hydroxide (NaOH). Use of fine mesh sieves is recommended for this procedure, and stirring or shaking the coated units may be necessary to obtain de-coated seed.

(d) Spread de-coated seed on blotters or filter paper in a shallow container. Air dry overnight at room temperature.

(e) Separation of component parts:

(1) Kind or variety considered pure seed.

(2) Other crop seed.

(3) Inert matter.

(4) Weed seed.

(f) The de-coated seed shall be separated into four components in accordance with §§ 201.48 through 201.51. §§ 201.51a (a) and (b) shall not be followed. The weight of the coating material is determined by subtracting the sum of the weights of the other four components from the original weight of the working sample. The percentage of coating material shall be included with the inert matter percentage. Calculate percentages of all components based on the original weight of the working sample (see paragraph (a) of this section).

[59 FR 64499, Dec. 14, 1994]

§ 201.52 Noxious-weed seeds.

(a) The determination of the number of seeds, bulblets, or tubers of individual noxious weeds present per unit weight should be made on at least the minimum quantities listed in § 201.46 Table 1: *Provided,* That if the following indicated numbers of a single kind of seed, bulblet, or tuber are found in the pure seed analysis (or noxious-weed seed examination of a like amount) the occurrence of that kind in the remainder of the bulk examined for noxious-weed seeds need not be noted: ½-gram purity working sample, 16 or more seeds; 1-gram purity working sample, 23 or more seeds; 2-gram purity working sample or larger, 30 or more seeds. The seeds per unit weight shall be based on the number of single seeds. The number of individual seeds shall be determined in burs of sandbur (*Cenchrus* spp.) and cocklebur (*Xanthium* spp.); in capsules of dodder

(*Cuscuta* spp.); in berries of groundcherry, horsenettle, and nightshade (Solanaceae); and in the fruits of other noxious weeds that contain more than one seed. Refer to §§ 201.50 and 201.51(b)(4) for the classification of weed seeds and inert matter, respectively.

(b) A noxious-weed seed examination of coated seed samples shall be made by examining approximately 25,000 units obtained in accordance with § 201.46(d) and which have been de-coated by the method described in § 201.51b(c).

[59 FR 64499, Dec. 14, 1994]

GERMINATION TESTS IN THE ADMINISTRATION OF THE ACT

§ 201.53 Source of seeds for germination.

(a) When both purity and germination tests are required, seeds for germination shall be taken from the separation of the kind, variety, or type considered pure seed and shall be counted without discrimination as to size or appearance.

(b) When only a germination test is required and the pure seed is estimated or determined to be at least 98 percent, the pure seed for the germination test may be taken indiscriminately from a representative portion of the bulk.

(c) When only a germination test is required and the pure seed is found to be less than 98 percent, the seed for the test shall be obtained by separating the sample into two components as follows: (1) Pure seed and (2) other crop seed, weed seed, and inert matter. In making this separation at least ¼ of the quantity required for a regular purity analysis shall be used. The whole sample must be well mixed and divided in such a manner as to get a completely representative subsample.

[10 FR 9952, Aug. 11, 1945, as amended at 20 FR 7931, Oct. 21, 1955]

§ 201.54 Number of seeds for germination.

At least 400 seeds shall be tested for germination; except that in mixtures, 200 seeds of each of those kinds present to the extent of 15 percent or less may be used in lieu of 400, in which case an additional 2 percent is to be added to the regular germination tolerances. The seeds shall be tested in replicate tests of 100 seeds or less.

[59 FR 64500, Dec. 14, 1994]

§ 201.55 Retests.

Retests shall be made as follows:

(a) When the range of 100-seed replicates of a given test exceeds the maximum tolerated range in the table appearing in this section.

TABLE OF MAXIMUM TOLERATED RANGES BETWEEN 100-SEED REPLICATES FOR USE IN CONNECTION WITH § 201.55(a)

Average percent germinations		Maximum allowed between replicates		
		4 replicates	3 replicates	2 replicates
99	2	5	.....	.....
98	3	6	5	.....
97	4	7	6	6
96	5	8	7	6
95	6	9	8	7
94	7	10	9	8
93	8	10	9	8
92	9	11	10	9
91	10	11	10	9
90	11	12	11	9
89	12	12	11	10
88	13	13	12	10
87	14	13	12	11
86	15	14	13	11
85	16	14	13	11
84	17	14	13	11
83	18	15	14	12
82	19	15	14	12
81	20	15	14	12
80	21	16	15	13
79	22	16	15	13
78	23	16	15	13
77	24	17	15	13
76	25	17	16	13
75	26	17	16	14
74	27	17	16	14
73	28	17	16	14
72	29	18	16	14
71	30	18	16	14
70	31	18	17	14
69	32	18	17	14
68	33	18	17	15
67	34	18	17	15
66	35	19	17	15
65	36	19	17	15
64	37	19	17	15
63	38	19	18	15
62	39	19	18	15
61	40	19	18	15
60	41	19	18	15
59	42	19	18	15
58	43	19	18	15
57	44	19	18	15
56	45	19	18	15
55	46	20	18	15
54	47	20	18	16
53	48	20	18	16
52	49	20	18	16
51	50	20	18	16

(b) When at the time of the prescribed final count there are indications, such as presence of firm ungerminated seeds, that a satisfactory germination has not been obtained;

(c) When there is evidence that the results may not be reliable due to improper test conditions, errors in seedling evaluation, the presence of fungi or bacteria, or inaccuracies in counting or recording results;

(d) When a sample shows seedling injury or abnormality as a result of chemical treatment, of exposure to chemicals, or of toxicity from any source. (Retest shall be made in soil or a mixture of soil and sand);

(e) When no two satisfactory tests are within tolerance.

EXPLANATORY NOTE: To find the maximum tolerated range, compute the average percentage of all 100-seed replicates of a given test, rounding off the result to the nearest whole number. The germination is found in the first two columns of the table. When the differences between highest and lowest replicates do not exceed the corresponding values found in the ''4-replicate'' column, no additional testing is required. If the differences exceed these values, omit the lowest replicate and compute the average of the three remaining replicates. If the range between the highest and lowest three replicates do not exceed the values in the ''3-replicate'' column for the new average percentage germination, retesting is not required and the average of the three replicates shall be regarded as the percentage germination. However, if the differences exceed the values in the ''3-replicate'' column, retesting is necessary.

When only 200 seeds are tested, retest if the range of the two replicates exceeds the values in the ''2-replicate'' column. In order to form 100-seed replicates, combine subreplicates of 25 or 50 seeds which were closest together in the germinator.

[25 FR 8771, Sept. 13, 1960]

§ 201.55a Moisture and aeration of substratum.

(a) The substratum must be moist enough to supply the needed moisture to the seeds at all times. Excessive moisture which will restrict aeration of the seeds should be avoided. Except as provided for those kinds of seeds requiring high moisture levels of the germination media, the substrata should never be so wet that a film of water is formed around the seeds. For most kinds of seeds blotters or other paper substrata should not be so wet that by pressing, a film of water forms around the finger.

(b) The following formula may be used as a guide in the preparation of sand for germination tests:

[118.3 cc. (1 gill) sand/Its weight in grams]×20.2−8.0=The number of cc. of water to add to each 100 grams of air-dry sand.

(c) The amount of water provided by this formula is satisfactory for seeds the size of clovers and will have to be modified slightly, depending on the kind of seed being tested and the kind of sand used. For example, slightly more moisture should be added when the larger seeds are to be tested.

(d) In preparing soil tests water should be added to the soil until it can be formed into a ball when squeezed in the palm of the hand but will break freely when pressed between two fingers. After the soil has been moistened it should be rubbed through a sieve and put in the seed containers without packing.

(e) The addition of water subsequent to placing the seed in test will depend on the evaporation from the substrata in the germination chambers. Since the rate of evaporation will depend upon the relative humidity of the air, it is desirable to keep water in the germination chambers or to provide other means of supplying a relative humidity of approximately 95 percent. Germination tests should be observed at frequent intervals to insure an adequate moisture supply of the substrata at all times.

[20 FR 7931, Oct. 21, 1955]

§ 201.56 Interpretation.

(a) A seed shall be considered to have germinated when it has developed those essential structures which, for the kind of seed under consideration, are indicative of its ability to produce a normal plant under favorable conditions. In general, the following are considered to be essential structures necessary for the continued development of the seedling (although some structures may not be visible in all kinds at

the time of seedling evaluation). Seedlings possessing these essential structures are referred to as normal seedlings: Root system (consisting of primary, secondary, seminal, or adventitious roots); hypocotyl; epicotyl; cotyledon(s); terminal bud; primary leaves; and coleoptile and mesocotyl (in the grass family). Abnormal seedlings consist of those with defects to these structures, as described in the abnormal seedling descriptions, and are judged to be incapable of continued growth. The seedling descriptions assume that test conditions were adequate to allow proper assessment of the essential seedling structures.

(b) Sand and/or soil tests may be used as a guide in determining the classification of questionable seedlings and the evaluation of germination tests made on approved artificial media. This is intended to provide a method of checking the reliability of tests made on artificial substrata when there may be doubt as to the proper evaluation of such tests.

(c) Seedlings infected with fungi or bacteria should be regarded as normal if all essential structures are present. A seedling that has been seriously damaged by bacteria or fungi from any source other than the specific seed should be regarded as normal if it is determined that all essential structures were present before the injury or damage occurred. Germination counts should be made on samples where contamination and decay are present at approximately 2-day intervals between the usual first count and the final count. During the progress of the germination test, seeds which are obviously dead and moldy and which may be a source of contamination of healthy seeds should be removed at each count and the number of such dead seeds should be recorded. When symptoms of certain diseases develop which can be readily recognized and identified, their presence should be noted.

(d) Seed units containing more than one seed or embryo, such as New Zealand spinach seed, Beta seed, double fruits of the carrot family (Umbelliferae), multiple seeds of burnet, and seed units of grasses consisting of multiple florets, shall be tested as a single seed and shall be regarded as having germinated if they produce one or more normal seedlings.

(e) Standard guides for seedling interpretation shall include the following descriptions for specific kinds and groups. The ''General Description'' for each group of crop kinds describes a seedling without defects. While such a seedling is clearly normal, seedlings with some defects may also be classified as normal, provided the defects do not impair the functioning of the structure. The ''Abnormal seedling description'' is to be followed when judging the severity of defects.

[20 FR 7931, Oct. 21, 1955, as amended at 25 FR 8771, Sept. 13, 1960; 59 FR 64500, Dec. 14, 1994]

§ 201.56–1 Goosefoot family, Chenopodiaceae, and Carpetweed family, Aizoaceae.

Kinds of seed: Beet, Swiss chard, fourwing saltbush, spinach, New Zealand spinach, and forage kochia.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Leaf-like cotyledons and perisperm.

(3) Shoot system: The hypocotyl elongates carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(4) Root system: A primary root; secondary roots may develop within the test period.

(5) Seedling: Frequent counts should be made on multigerm beet since the growing seedlings will separate from the cluster making it difficult to identify the source. Any cluster which produces at least one normal seedling is classified as normal; only one normal seedling per cluster is to be counted (see § 201.56(d)). Toxic substances from the clusters of beet and Swiss chard may cause discoloring of the hypocotyl and/or root. Seedlings which are slightly discolored are to be classified as normal; however, if there is excessive discoloration, retest by the method in § 201.58(b)(3).

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:
(i) Missing. (May be assumed to be present if cotyledons are intact.)
(ii) [Reserved]
(3) Hypocotyl:
(i) Deep open cracks extending into the conducting tissue.
(ii) Malformed, such as markedly shortened, curled, or thickened.
(iii) Watery.
(4) Root:
(i) None.
(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.
(iii) For discolored roots of beet and Swiss chard, see § 201.58(b)(3).
(5) Seedling:
(i) One or more essential structures impaired as a result of decay from primary infection. (For discolored seedlings of beet and Swiss chard, see § 201.58(b)(3).)
(ii) Albino.

[59 FR 64500, Dec. 14, 1994]

§ 201.56–2 Sunflower family, Asteraceae (Compositae).

Kinds of seed: Artichoke, cardoon, chicory, dandelion, endive, great burdock, lettuce, safflower, salsify, Louisiana sagewort, and sunflower.
(a) Lettuce.
(1) General description.
(i) Germination habit: Epigeal dicot.
(ii) Food reserves: Cotyledons which expand and become thin, leaf-like, and photosynthetic. The cotyledons of some varieties develop elongated petioles.
(iii) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.
(iv) Root system: A long primary root.
(v) Seedling: The interpretations of lettuce seedlings are made only at the end of the test period.
(2) Abnormal seedling description.
(i) Cotyledons:
(A) Less than half of the original cotyledon tissue remaining attached.
(B) Less than half of the original cotyledon tissue free of necrosis or decay. (Remove attached seed coat for evaluation of cotyledons. Physiological necrosis is manifested by discolored areas on the cotyledons and should not be confused with natural pigmentation of some lettuce varieties.)
(ii) Epicotyl:
(A) Missing. (May be assumed to be present if cotyledons are intact.)
(B) Any degree of necrosis or decay.
(iii) Hypocotyl:
(A) Deep open cracks extending into the conducting tissue.
(B) Severely twisted or grainy.
(C) Watery.
(iv) Root:
(A) Stubby or missing primary root. (Secondary roots will not compensate for a defective primary root.)
(B) Primary root tip blunt, swollen, or discolored. (Toxic materials in the substratum may cause short, blunt roots; see § 201.58(a)(9).)
(C) Primary root with splits or lesions.
(v) Seedling:
(A) Swollen cotyledons associated with extremely short or vestigial hypocotyl and root.
(B) One or more essential structures impaired as a result of decay from primary infection.
(C) Albino.
(b) Other kinds in the sunflower family: Artichoke, cardoon, chicory, dandelion, endive, great burdock, safflower, salsify, Louisiana sagewort, and sunflower.
(1) General description.
(i) Germination habit: Epigeal dicot.
(ii) Food reserves: Cotyledons which expand and become thin, leaf-like, and photosynthetic.
(iii) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.
(iv) Root system: A long primary root with secondary roots usually developing within the test period.
(2) Abnormal seedling description.
(i) Cotyledons:
(A) Less than half of the original cotyledon tissue remaining attached.
(B) Less than half of the original cotyledon tissue free of necrosis or decay. (Remove any attached seed coats at the end of the test period for evaluation of cotyledons.)
(ii) Epicotyl:

(A) Missing. (May be assumed to be present if cotyledons are intact.)
(B) [Reserved]
(iii) Hypocotyl:
(A) Deep open cracks extending into the conducting tissue.
(B) Malformed, such as markedly shortened, curled, or thickened.
(C) Watery.
(iv) Root:
(A) None.
(B) Weak, stubby, or missing primary root with weak secondary or adventitious roots. (Seedlings with roots bound within tough seed coats should be left in the test until the final count to allow for development.)
(v) Seedling:
(A) One or more essential structures impaired as a result of decay from primary infection.
(B) Albino.

[59 FR 64500, Dec. 14, 1994]

§ 201.56–3 Mustard family, Brassicaceae (Cruciferae).

Kinds of seed: Broccoli, brussels sprouts, cabbage, Chinese cabbage, cauliflower, collards, garden cress, upland cress, water cress, kale, Chinese kale, Siberian kale, kohlrabi, mustard, pakchoi, radish, rape, rutabaga, and turnip.
(a) General description.
(1) Germination habit: Epigeal dicot.
(2) Food reserves: Cotyledons which expand and become thin, leaf-like and photosynthetic. In *Brassica, Sinapis,* and *Raphanus,* the cotyledons are bilobed and folded, with the outer cotyledon being larger than the inner.
(3) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface; the epicotyl usually does not show any development within the test period.
(4) Root system: A long primary root.
(b) Abnormal seedling description.
(1) Cotyledons:
(i) Decayed at point of attachment.
(ii) Less than half of the original cotyledon tissue remaining attached.
(iii) Less than half of the original cotyledon tissue free of necrosis or decay.
(2) Epicotyl:
(i) Missing. (May be assumed to be present if the cotyledons are intact.)
(ii) [Reserved]
(3) Hypocotyl:
(i) Deep open cracks extending into the conducting tissue.
(ii) Malformed, such as markedly shortened, curled, or thickened.
(iii) Watery.
(4) Root:
(i) Weak, stubby, or missing primary root. (Secondary roots will not compensate for a defective root.)
(ii) [Reserved]
(5) Seedling:
(i) One or more essential structures impaired as result of decay from primary infection.
(ii) Albino.

[59 FR 64501, Dec. 14, 1994]

§ 201.56–4 Cucurbit family, (Cucurbitaceae).

Kinds of seed: Citron, cucumber, West India gherkin, melon, pumpkin, squash, and watermelon.
(a) General description.
(1) Germination habit: Epigeal dicot.
(2) Food reserves: Cotyledons which are large and fleshy; they expand, become photosynthetic, and usually persist beyond the seedling stage.
(3) Shoot system: The hypocotyl elongates and the cotyledons are pulled free of the seed coat, which often adheres to a peg-like appendage at the base of the hypocotyl. The epicotyl usually does not show any development within the test period.
(4) Root system: A long primary root with numerous secondary roots.
(b) Abnormal seedling description.
(1) Cotyledons:
(i) Less than half of the original cotyledon tissue remaining attached.
(ii) Less than half of the original cotyledon tissue free of necrosis or decay. (Remove any attached seed coats at the end of the test period for evaluation of cotyledons.)
(2) Epicotyl:
(i) Missing. (May be assumed to be present if the cotyledons are intact.)
(ii) [Reserved]
(3) Hypocotyl:
(i) Deep open cracks extending into the conducting tissue.
(ii) Malformed, such as markedly shortened, curled, or thickened.
(4) Root:
(i) None.

(ii) Weak, stubby, or missing primary root, with less than two strong secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64501, Dec. 14, 1994]

§ 201.56–5 Grass family, Poaceae (Gramineae).

Kinds of seed: Bentgrasses, bluegrasses, bluestems, bromes, cereals, fescues, millets, orchardgrass, redtop, ryegrasses, sorghums, timothy, turf timothy, wheatgrasses, and all other grasses listed in § 201.2(h).

(a) Cereals: Agrotricum, barley, oat, rye, mountain rye, wheat, wheat x agrotricum, and triticale.

(1) General description.

(i) Germination habit: Hypogeal monocot.

(ii) Food reserves: Endosperm. The scutellum is a modified cotyledon which is in direct contact with the endosperm. During germination the scutellum remains inside the seed to absorb nutrients from the endosperm and transfer them to the growing seedling.

(iii) Shoot system: The shoot consists of the coleoptile, leaves enclosed in the coleoptile, and the mesocotyl. The coleoptile elongates and pushes through the soil surface; the mesocotyl may elongate depending on the variety and light intensity, but may not be discernible. Splitting of the coleoptile occurs naturally as a result of growth and emergence of the leaves.

(iv) Root system: A primary root and seminal roots. The primary root is not readily distinguishable from the seminal roots; therefore, all roots arising from the seed are referred to as seminal roots.

(2) Abnormal seedling description.

(i) Shoot:

(A) Missing.

(B) No leaf.

(C) Leaf extending less than halfway up into the coleoptile.

(D) Leaf extensively shredded or split.

(E) Spindly or watery.

(F) Grainy, spirally twisted, shredded, and weak.

(G) Deep open cracks in the mesocotyl.

(ii) Root:

(A) Less than one strong seminal root.

(B) [Reserved]

(iii) Seedling:

(A) Decayed at point of attachment to the scutellum.

(B) One or more essential structures impaired as a result of decay from primary infection.

(C) Albino.

(D) Endosperm obviously detached from the root-shoot axis (e.g. kernel lifted away by the growing shoot).

(E) Thickened and shortened roots and/or shoots.

(b) Rice.

(1) General description.

(i) Germination habit: Hypogeal monocot.

(ii) Food reserves: Endosperm. The scutellum is a modified cotyledon which is in direct contact with the endosperm. During germination the scutellum remains inside the seed to absorb nutrients from the endosperm and transfer them to the growing seedling.

(iii) Shoot system: The shoot consists of the coleoptile, leaves enclosed in the coleoptile, and the mesocotyl. The coleoptile elongates and pushes through the soil or water surface; the mesocotyl may elongate depending on the variety and environmental conditions. Splitting of the coleoptile occurs naturally as a result of growth and emergence of the leaves.

(iv) Root system: Strong primary root and seminal roots. Adventitious roots may start to develop from the mesocotyl or coleoptilar node within the test period. If the mesocotyl elongates, the adventitious roots will be carried above the grain.

(2) Abnormal seedling description.

(i) Shoot:

(A) Missing.

(B) No leaf.

(C) Leaf extending less than halfway up into the coleoptile.

(D) Leaf extensively shredded or split.

(E) Spindly or watery.

(F) Deep open cracks in the mesocotyl.

(ii) Root:

(A) None.

(B) Weak primary root with insufficient seminal or adventitious roots.

(iii) Seedling:

(A) Decayed at point of attachment to the scutellum.

(B) One or more essential structures impaired as a result of decay from primary infection.

(C) Albino.

(c) Corn.

(1) General description.

(i) Germination habit: Hypogeal monocot.

(ii) Food reserves: Endosperm. The scutellum is a modified cotyledon which is in direct contact with the endosperm. During germination the scutellum remains inside the seed to absorb nutrients from the endosperm and transfer them to the growing seedling.

(iii) Shoot system: The shoot consists of the coleoptile, leaves enclosed in the coleoptile, and the mesocotyl. The coleoptile elongates and pushes through the soil surface. The mesocotyl usually elongates. Splitting of the coleoptile occurs naturally as a result of growth and emergence of the leaves. A twisted and curled shoot bound by a tough seed coat may be considered normal, provided the shoot is not decayed.

(iv) Root system: Strong primary root and seminal roots. Adventitious roots may start to develop from the mesocotyl or coleoptilar node within the test period.

(2) Abnormal seedling description.

(i) Shoot:

(A) Missing.

(B) Thickened and shortened.

(C) No leaf.

(D) Leaf extending less than halfway up into the coleoptile.

(E) Leaf extensively shredded or split.

(F) Spindly or watery.

(G) Deep open cracks in the mesocotyl.

(ii) Root:

(A) None.

(B) Weak, stubby, or missing primary root with weak seminal roots.

(iii) Seedling:

(A) Decayed at point of attachment to the scutellum.

(B) One or more essential structures impaired as a result of decay from primary infection.

(C) Albino.

(d) Johnsongrass, sorghum, sorgrass, sorghum almum, sudangrass, and sorghum-sudangrass.

(1) General description.

(i) Germination habit: Hypogeal monocot.

(ii) Food reserves: Endosperm. The scutellum is a modified cotyledon which is in direct contact with endosperm. During germination the scutellum remains inside the seed to absorb nutrients from the endosperm and transfer them to the growing seedling.

(iii) Shoot system: The shoot consists of the coleoptile, leaves enclosed in the coleoptile, and the mesocotyl. The coleoptile elongates and pushes through the soil surface; the mesocotyl usually elongates. Areas of natural, reddish pigmentation may develop on the mesocotyl and coleoptile. Splitting of the coleoptile occurs naturally as a result of growth and emergence of the leaves.

(iv) Root system: A long primary root, usually with secondary roots developing within the test period. Adventitious roots may start to develop from the mesocotyl or coleoptilar node within the test period. Areas of natural, reddish pigmentation may develop on the root.

(2) Abnormal seedling description.

(i) Shoot:

(A) Missing.

(B) Thickened and shortened.

(C) No leaf.

(D) Leaf extending less than halfway up into the coleoptile.

(E) Leaf extensively shredded or split.

(F) Spindly or watery.

(G) Deep open cracks in the mesocotyl.

(ii) Root:

(A) None.

(B) Damaged or weak primary root with less than two strong secondary roots.

(iii) Seedling:

(A) Decayed at point of attachment to the scutellum.

(B) One or more essential structures impaired as a result of decay from primary infection.

(C) Albino.

(e) Grasses and millets.

(1) General description.

(i) Germination habit: Hypegeal monocot.

(ii) Food reserves: Endosperm. The scutellum is a modified cotyledon which is in direct contact with the endosperm. During germination the scutellum remains inside the seed to absorb nutrients from the endosperm and transfer them to the growing seedling.

(iii) Shoot system: The shoot consists of the coleoptile, leaves enclosed in the coleoptile, and the mesocotyl. The coleoptile elongates and pushes through the soil surface. The mesocotyl may or may not elongate significantly, depending on the kind. Splitting of the coleoptile occurs naturally as a result of growth and emergence of the leaves.

(iv) Root system: A long primary root. Secondary or adventitious roots may develop within the test period. In certain kinds (e.g. bermudagrass) the primary root may not be readily visible because it is coiled inside the tightly fitting lemma and palea. At the time of evaluation, the glumes should be removed and the root observed. Such seedlings are classified as normal if the primary root has developed. For Kentucky bluegrass, a primary root 1/16 inch (1.6 mm) or more in length is classified as normal.

(2) Abnormal seedling description.

(i) Shoot:

(A) Missing.

(B) Short, thick, and grainy.

(C) No leaf.

(D) Leaf extending less than halfway up into the coleoptile.

(E) Leaf extensively shredded or split.

(F) Spindly or watery.

(G) Deep open cracks in the mesocotyl.

(ii) Root:

(A) Missing or defective primary root even if other roots are present.

(B) Spindly, stubby, or watery primary root.

(iii) Seedling:

(A) Decayed at point of attachment to the scutellum.

(B) One or more essential structures impaired as a result of decay from primary infection.

(C) Albino.

(D) Yellow (when grown in light).

(E) Endosperm obviously detached from the root-shoot axis (e.g. kernel lifted away by the growing shoot).

[59 FR 64501, Dec. 14, 1994]

§ 201.56–6 Legume or pea family, Fabaceae (Leguminosae).

Kinds of seed: Alfalfa, alyceclover, asparagusbean, beans (*Phaseolus* spp.), Florida beggarweed, black medic, broadbean, burclovers, buttonclover, chickpea, clovers (*Trifolium* spp.), cowpea, crotalarias, crownvetch, guar, hairy indigo, kudzu, lentil, lespedezas, lupines, northern sweetvetch, peas, peanut, roughpea, sainfoin, sesbania, sourclover, soybean, sweetclovers, trefoils, velvetbean, and vetches.

(a) Field bean, garden bean, lima bean, mung bean, asparagusbean, and cowpea.

(1) General description.

(i) Germination habit: Epigeal dicot.

(ii) Food reserves: Cotyledons which are large and fleshy.

(iii) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface. The epicotyl elongates, causing the terminal bud to emerge from between the cotyledons; the primary leaves expand rapidly.

(iv) Root system: A long primary root with secondary roots.

(2) Abnormal seedling description.

(i) Cotyledons:

(A) For garden bean (*Phaseolus vulgaris* in part), remove any attached seed coats at the end of the test period for evaluation of cotyledons:

(*1*) Less than half of the original cotyledon tissue remaining attached.

(*2*) Less than half of the original cotyledon tissue free of necrosis or decay.

(B) All other kinds:

(*1*) Both missing and the seedling generally weak.

(*2*) [Reserved]

(ii) Epicotyl:

(A) Missing.

(B) Deep open cracks.

(C) Malformed, such as markedly curled or thickened.

(D) Less than one primary leaf.

(E) Primary leaves too small in proportion to the rest of the seedling, usually associated with visible defects of, or damage to, the main stem of the epicotyl.

(F) Terminal bud missing or damaged. (If a few seedlings with total or partial decay to the epicotyl are found, they may be classified as normal, provided the hypocotyl and root are normal. The epicotyl on such seedlings usually does not decay when grown in a fairly dry environment and exposed to light. A retest, preferably in soil or sand, will aid in interpretation of such seedlings.)

(iii) Hypocotyl:

(A) Deep open cracks extending into the conducting tissue. (A healed break, sometimes referred to as a ''knee,'' is considered normal.)

(B) Malformed, such as markedly shortened, curled, or thickened. (Hypocotyl stunting or curling may be caused by seedling orientation or constriction on or in the substratum.) (Hypocotyl collar rot is the breakdown of hypocotyl tissue initially characterized by a watery appearance and collapse of the hypocotyl below the cotyledonary node. The area later becomes discolored, shrivelled, and necrotic. The condition is caused by insufficient calcium available to the seedling. If hypocotyl collar rot is observed on seedlings of garden bean, the sample involved shall be retested in accordance with § 201.58(b)(12).)

(iv) Root:

(A) None.

(B) Weak, stubby, or missing primary root with weak secondary or adventitious roots. (A root bound within a tough seed coat is considered normal.)

(v) Seedling:

(A) One or more essential structures impaired as the result of decay from primary infection. (Secondary infection is common in towel and blotter tests. Some pathogens, such as *Fusarium, Phomopsis,* and *Rhizoctonia,* can spread through the substratum and infect seedlings some distance away from the primary source. Seedlings with secondary infection are to be classified as normal. A retest in sand or soil may be advisable.)

(B) Albino.

(b) Adzuki bean, broadbean, chickpea, field pea, lentil, pea, roughpea, runner bean, velvetbean, and vetches.

(1) General description.

(i) Germination habit: Hypogeal dicot.

(ii) Food reserves: Cotyledons which are large and fleshy, and remain enclosed within the seed coat beneath the soil surface. They are usually not photosynthetic.

(iii) Shoot system: The epicotyl elongates and carries the terminal bud and primary leaves above the soil surface. The stem bears one or more scale leaves and, prior to emergence, is arched near the apex, causing the terminal bud to be pulled through the soil; after emergence, the stem straightens. For practical purposes, the hypocotyl is not discernible and is not an evaluation factor. Buds in the axils of each cotyledon and scale leaf usually remain dormant unless the terminal bud is seriously damaged. In this case, one or more axillary buds may start to develop into a shoot. If the axillary shoot is well-developed, it may be considered normal.

(iv) Root system: A long primary root with secondary roots.

(2) Abnormal seedling description.

(i) Cotyledons:

(A) Less than half of the original tissue remaining attached.

(B) Less than half of the original tissue free of necrosis or decay.

(ii) Epicotyl:

(A) Missing.

(B) Less than one primary leaf.

(C) Malformed such as markedly shortened, curled, or thickened.

(D) Severely damaged (e.g. terminal bud missing or damaged) with only a weak shoot developing from the axil of a cotyledon or scale leaf.

(E) Two weak and spindly shoots.

(F) Deep open cracks extending into the conducting tissue.

(iii) Root:

(A) None.

(B) Weak, stubby, or missing primary root with weak secondary roots.

(iv) Seedlings:

(A) One or more essential structures impaired as a result of decay from primary infection. (Secondary infection is common in towel and blotter tests.

Some pathogens can spread through the substratum and infect seedlings some distance away from the primary source. Seedlings with secondary infection are classified as normal. A retest in sand or soil may be advisable.)

(B) Albino.

(c) Soybean and lupine.

(1) General description.

(i) Germination habit: Epigeal dicot.

(ii) Food reserves: Cotyledons, which are large and fleshy; they expand and become photosynthetic.

(iii) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface. The primary leaves usually increase in size and the epicotyl may elongate within the test period.

(iv) Root system: A long primary root with secondary roots.

(2) Abnormal seedling description.

(i) Cotyledons.

(A) Less than half of the original cotyledon tissue remaining attached.

(B) Less than half of the original cotyledon tissue free of necrosis or decay.

(ii) Epicotyl.

(A) Missing.

(B) Less than one primary leaf.

(C) Deep open cracks.

(D) Terminal bud damaged, missing, or decayed. (If a few seedlings with partial decay of the epicotyl are found, they may be classified as normal, provided the hypocotyl and root are normal. The epicotyl on such seedlings usually does not decay when grown in a fairly dry environment and is exposed to light. A retest, preferably in soil or sand, will aid in interpretation of such seedlings.)

(iii) Hypocotyl:

(A) Deep open cracks extending into the conducting tissue. (Adventitious roots may occur at the site of injury, particularly on the hypocotyl and near the base of the cotyledons. The seedling is classified as normal if the injury is healed over and other essential structures are normal.)

(B) Malformed, such as markedly shortened, curled, or thickened. (Hypocotyl development is slow until the roots start functioning. Caution should be exercised to ensure slow seedlings are not classified as abnormal. Hypocotyl stunting or curling also may be caused by seedling orientation or constriction on or in the substratum.)

(iv) Root:

(A) None.

(B) Weak, stubby, or missing primary root with weak secondary or adventitious roots. (Roots of seedlings on ''Kimpak'' with insufficient moisture may not become established and hypocotyl elongation may appear to be abnormal. There may be curling of the root and hypocotyl. When a number of seedlings are observed with this condition, the sample should be retested.)

(v) Seedlings:

(A) One or more essential structures impaired as a result of decay from primary infection. (Secondary infection is common in towel and blotter tests. Some pathogens, such as *Fusarium, Phomopsis,* and *Rhizoctonia,* can spread through the substratum and infect seedlings some distance away from the primary source. Seedlings with secondary infection are to be classified as normal. A retest in sand or soil may be advisable.)

(B) Albino.

(d) Peanut.

(1) General description.

(i) Germination habit: Epigeal dicot.

(ii) Food reserves: Cotyledons, which are large and fleshy.

(iii) Shoot system: The cotyledons are carried to the soil surface by the hypocotyl which is very thick, narrowing abruptly at the root. Elongation of the hypocotyl stops when the epicotyl is exposed to light at the soil surface. The primary leaves are compound and usually expand during the test period.

(iv) Root system: A long primary root with secondary roots. Adventitious roots develop from the base of the hypocotyl if the primary root is damaged.

(2) Abnormal seedling description.

(i) Cotyledons:

(A) Less than half of the original cotyledon tissue remaining attached.

(B) Less than half of the original cotyledon tissue free of necrosis or decay.

(ii) Epicotyl:

(A) Missing.

(B) Less than one primary leaf.

(C) Deep open cracks.

(D) Terminal bud damaged, missing, or decayed.

(iii) Hypocotyl:

(A) Deep open cracks extending into the conducting tissue.

(B) Malformed, such as markedly shortened or curled. (Hypocotyls remain somewhat thickened and may appear to be stunted. Light, depth of planting, and substratum moisture all contribute to the length of the hypocotyl. Hypocotyl stunting or curling may be caused by seedling orientation or constriction in the substratum. Seedlings planted in a soil test with the radicle too close to the surface may send roots above the soil and appear to exhibit negative geotropism and a distorted, U-shaped hypocotyl.

(iv) Root:

(A) None.

(B) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(v) Seedling:

(A) One or more essential structures impaired as a result of primary infection.

(B) Albino.

(e) Alfalfa, alyceclover, Florida beggarweed, black medic, burclovers, buttonclover, milkvetch, clovers, crotalarias, crownvetch, guar, hairy indigo, kudzu, lespedezas, northern sweetvetch, sainfoin, sesbania, sourclover, sweetclovers, and trefoils.

(1) General description.

(i) Germination habit: Epigeal dicot.

(ii) Food reserve: Cotyledons, which are small and fleshy; they expand and become photosynthetic. The cotyledons of sub clover develop elongated petioles.

(iii) Shoot system: The hypocotyl elongates and carries the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(iv) Root system: A long, tapering primary root, usually with root hairs. Secondary roots may or may not develop within the test period, depending on the kind.

(2) Abnormal seedling description.

(i) Cotyledons:

(A) Less than half of the original cotyledon tissue remaining attached. (Breaks at the point of attachment of the cotyledons to the hypocotyl are common in seeds which have been mechanically damaged. It is important that seedlings not be removed during preliminary counts unless development is sufficient to allow the conditions of the cotyledons to be determined. If the point of attachment of the cotyledons cannot be seen at the end of the test, the seed coat should be peeled back to determine whether a break has occurred.)

(B) Less than half of the original cotyledon tissue free of necrosis or decay.

(ii) Epicotyl:

(A) Missing. (May be assumed to be present if both cotyledons are intact.)

(B) [Reserved]

(iii) Hypocotyl:

(A) Deep open cracks extending into the conducting tissue.

(B) Malformed, such as markedly shortened, curled, or thickened. (Seedlings of sainfoin which have been constricted by growing through the netting of the pod, but which are otherwise normal, are classified as normal.)

(C) Weak and watery.

(iv) Root:

(A) None.

(B) Primary root stubby. (The roots of sweetclovers may be stubby when grown on artificial substrata due to the presence of coumarin in the seed; since this condition usually does not occur in soil, such seedlings are classified as normal. Roots may appear stubby as a result of being bound by the seed coat; such seedlings are classified as normal. Crownvetch produces phytotoxic effects similar to sweetclovers.)

(C) Split extending into the hypocotyl.

(v) Seedling:

(A) One or more essential structures impaired as a result of decay from primary infection.

(B) Albino.

[59 FR 64503, Dec. 14, 1994]

§ 201.56–7 Lily family, Liliaceae.

Kinds of seed: Asparagus, chives, leek, onion, and Welsh onion.

(a) Asparagus.

(1) General description.

(i) Germination habit: Hypogeal monocot.

(ii) Food reserves: Endosperm which is hard, semi- transparent, and nonstarchy; minor reserves in the cotyledon. The endosperm surrounds the entire embryo.

(iii) Cotyledon: A single cylindrical cotyledon; following germination, all but the basal end remains embedded in the endosperm to absorb nutrients.

(iv) Shoot system: The epicotyl elongates and carries the terminal bud above the soil surface. The epicotyl may bear several small scale leaves. A short hypocotyl is barely distinguishable, joining the root to the basal end of the cotyledon. More than one shoot may arise simultaneously, and the seedling may be considered normal if at least one shoot is well- developed and has a terminal growing point, provided other essential structures are normal.

(v) Root system: A long slender primary root.

(2) Abnormal seedling description.

(i) Cotyledon:

(A) Detached from seedling.

(B) Deep open cracks at basal end.

(ii) Epicotyl:

(A) Missing.

(B) Terminal bud missing or damaged.

(C) Deep open cracks.

(D) Malformed, such as markedly shortened, curled, or thickened.

(E) Spindly.

(F) Watery.

(iii) Hypocotyl:

(A) Deep open cracks.

(B) [Reserved]

(iv) Root:

(A) No primary root.

(B) Stubby primary root with weak secondary roots.

(v) Seedling:

(A) One or more essential structures impaired as a result of decay from primary infection.

(B) Albino.

(b) Chives, leek, onion, Welsh onion.

(1) General description.

(i) Germination habit: Epigeal monocot.

(ii) Food reserves: Endosperm which is hard, semi-transparent, and nonstarchy; minor reserves in the cotyledon.

(iii) Cotyledon: A single cylindrical cotyledon. The cotyledon emerges with the seed coat and endosperm attached to the tip. A sharp bend known as the ''knee'' forms; continued elongation of the cotyledon on each side of this knee pushes it above the soil surface. The cotyledon tip is pulled from the soil and straightens except for a slight kink which remains at the site of the knee.

(iv) Shoot system: The first foliage leaf emerges through a slit near the base of the cotyledon, but this does not usually occur during the test period. The hypocotyl is a very short transitional zone between the primary root and the cotyledon, and is not distinguishable for purposes of seedling evaluation.

(v) Root system: A long slender primary root with adventitious roots developing from the hypocotyl. The primary root does not develop secondary roots.

(2) Abnormal seedling description.

(i) Cotyledon:

(A) Short and thick.

(B) Without a definite bend or ''knee''.

(C) Spindly or watery.

(ii) Epicotyl:

(A) Not observed during the test period.

(B) [Reserved]

(iii) Hypocotyl:

(A) Not evaluated.

(B) [Reserved]

(iv) Root:

(A) No primary root.

(B) Short, weak, or stubby primary root.

(v) Seedling:

(A) One or more essential structures impaired as a result of decay from primary infection.

(B) Albino.

[59 FR 64504, Dec. 14, 1994]

§ 201.56–8 Flax family, Linaceae.

Kind of seed: Flax.

(a) General description.

(1) Germination habit: Epigeal dicot. (Due to the mucilaginous nature of the seed coat, seedlings germinated on blotters may adhere to the blotter and appear to be negatively geotropic.)

(2) Food reserves: Cotyledons which expand and become photosynthetic.

(3) Shoot system: The hypocotyl elongates carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(4) Root system: A primary root, with secondary roots usually developing within the test period.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:

(i) Missing. (May be assumed to be present if cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Deep open cracks extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(4) Root:

(i) None.

(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64505 Dec. 14, 1994]

§ 201.56–9 Mallow family, Malvaceae.

Kinds of seed: Cotton, kenaf, and okra.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserve: Cotyledons, which are convoluted in the seed; they expand and become thin, leaf-like, and photosynthetic.

(3) Shoot system: The hypocotyl elongates carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period. Areas of yellowish pigmentation may develop on the hypocotyl in cotton.

(4) Root system: A primary root, with secondary roots usually developing within the test period. Areas of yellowish pigmentation may develop on the root in cotton.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay. (Remove any attached seed coats at the end of the test period for evaluation of cotyledons.)

(2) Epicotyl:

(i) Missing. (May be assumed to be present if both cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Deep open cracks or grainy lesions extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(4) Root:

(i) None.

(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection. (A cotton seedling with yellowish areas on the root or hypocotyl is classified as normal, provided the cotyledons are free of infection.)

(ii) Albino.

[59 FR 64505 Dec. 14, 1994]

§ 201.56–10 Spurge family, Euphorbiaceae.

Kind of seed: Castorbean.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons, which are thin and leaf-like; endosperm (fleshy food-storage organs) usually persisting in the laboratory test.

(3) Shoot system: The hypocotyl lengthens, carrying the cotyledons, endosperm, and epicotyl above the soil surface.

(4) Root system: A primary root, with secondary roots usually developing within the test period.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Endosperm:

(i) Missing.

(ii) [Reserved]

(3) Epicotyl:

(i) Missing.

(ii) Damaged or missing terminal bud.

(4) Hypocotyl:

(i) Deep open cracks extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(5) Root:

(i) None.

(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(6) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64505 Dec. 14, 1994]

§ 201.56–11 Knotweed family, Polygonaceae.

Kinds of seed: Buckwheat, rhubarb, and sorrel.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons, starchy endosperm.

(3) Shoot system: The hypocotyl elongates carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(4) Root system: A primary root, with secondary roots developing within the test period for some kinds.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:

(i) Missing. (May be assumed to be present if cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Deep open cracks or grainy lesions extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(iii) Watery.

(4) Root:

(i) None.

(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64506, Dec. 14, 1994]

§ 201.56–12 Miscellaneous plant families.

Kinds of seed by family:

Carrot family, Apiaceae (Umbelliferae)—carrot, celery, celeriac, dill, parsley, parsnip;

Hemp family, Cannabaceae—hemp;

Dichondra family, Dichondraceae—dichondra;

Geranium family, Geraniaceae—alfilaria;

Mint family, Lamiaceae (Labiatae)—sage, summer savory; benne family, Pedaliaceae—sesame;

Rose family, Rosaceae—little burnet;

Nightshade family, Solanaceae—eggplant, tomato, husk tomato, pepper, tobacco; and

Valerian family, Valerianaceae—cornsalad.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons; endosperm may or may not be present, depending on the kind.

(3) Shoot system: The hypocotyl elongates, carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(4) Root system: A primary root; secondary roots may or may not develop within the test period, depending on the kind.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:

(i) Missing. (May be assumed to be present if the cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Malformed, such as markedly shortened, curled, or thickened.

(ii) Deep open cracks extending into the conducting tissue.

(iii) Watery.

(4) Root:

(i) None.

(ii) Missing or stubby primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64506, Dec. 14, 1994]

§ 201.57 Hard seeds.

Seeds which remain hard at the end of the prescribed test because they have not absorbed water, due to an impermeable seed coat, are to be counted as ''hard seed.'' If at the end of the germination period provided for legumes, okra, cotton and dichondra in these rules and regulations there are still present swollen seeds or seeds of these kinds which have just started to germinate, all seeds or seedlings except the above-stated shall be removed and the test continued for 5 additional days and the normal seedlings included in the percentage of germination.

[5 FR 33, Jan. 4, 1940, as amended at 10 FR 9952, Aug. 11, 1945; 20 FR 7936, Oct. 21, 1955]

§ 201.57a Dormant seeds.

Dormant seeds are viable seeds, other than hard seeds, which fail to germinate when provided the specified germination conditions for the kind of seed in question.

(a) Viability of ungerminated seeds shall be determined by any of the following methods or combinations of methods: a cutting test, tetrazolium test, scarification, or application of germination promoting chemicals.

(b) The percentage of dormant seed, if present, shall be determined in addition to the percentage of germination for the following kinds: Bahiagrass, basin wildrye, big bluestem, little bluestem, sand bluestem, yellow bluestem, bottlebrush-squirreltail, buffalograss, buffelgrass, galletagrass, forage kochia, blue grama, side-oats grama, Indian ricegrass, johnsongrass, sand lovegrass, weeping lovegrass, mountain rye, sand dropseed, smilo, switchgrass, veldtgrass, western wheatgrass, and yellow indiangrass.

(c) For green needlegrass, if the test result of method 2 is less than the result of method 1, subtract the result of method 2 from method 1 and report the difference as the percentage of dormant seed. Refer to § 201.58(b)(7).

[46 FR 53638, Oct. 29, 1981, as amended at 59 FR 64506, Dec. 14. 1994]

§ 201.58 Substrata, temperature, duration of test, and certain other specific directions for testing for germination and hard seed.

Specific germination requirements are set forth in table 2 to which the following paragraphs (a), (b), and (c) are applicable.

(a) *Definitions and explainations applicable to table 2*—(1) *Duration of tests.* The following deviations are permitted from the specified duration of tests: Any test may be terminated prior to the number of days listed under ''Final count'' if the mixiumum germination of the sample has then been determined. The number of days stated for the first count is approximate and a deviatioon of 1 to 3 days is permitted. If at the time of the prescribed test period the seedlings are not sufficiently developed for positive evaluation, it is possible to extend the time of the test period two additional days. (Also, see paragraph (a)(5) of this section and 201.57.)

(2) *Light.* Cool white fluorescent light shall be provided where light is required in table 2. The light intensity shall be 75 to 125 foot-candles (750–1,250 lux). (The light intensity for nondormant seed and during seedling development may be as low as 25 foot-candles to enable the essential structures to be evaluated with greater certainty.) The seeds shall be illuminated for at least 8 hours every 24 hours except when transferred to a low temperature germinator during the weekend. When seeds are germinated at alternating temperatures they shall be illuminated during high temperature periods. Seeds for which light is prescribed shall be germinated on top of the substratum except for ryegrass fluorescence tests.

(3) *Moisture-on-dry-side.* This term means that the moistened substratum should be pressed against a dry absorbent surface such as a dry paper towel or blotter to remove excess moisture. The moisture content thus obtained should be maintained throughout the germination test period.

(4) *Potassium nitrate* (KNO_3). These terms mean a two-tenths (0.2) percent solution of potassium nitrate (KNO_3) shall be used in moistening the substratum. Such solution is prepared by dissolving 2 grams of KNO_3 in 1,000 ml.

of distilled water. The grade of the potassium nitrate shall meet A.C.S. specifications.

(5) *Prechill.* The term ''prechill'' means a cold, moist treatment applied to seeds to overcome dormancy prior to the germination test. The prechill method varies among kinds, but is usually performed by holding imbibed seeds at a low temperature for a specified period of time. The prechill period is not included in the duration of tests given in table 2, unless otherwise specified.

(6) *Predry.* The term ''predry'' means to place the seed in a shallow layer at a temperature of 35 ° to 40 °C. for a period of 5 to 7 days, with provisions for circulation of the air.

(7) *Substrata* (*Kinds*). The symbols used for substrata are:

B= between blotters
TB= top of blotters
T= paper toweling, used either as folded towel tests or as roll towel tests in horizontal or vertical position
S= sand or soil
TS= top of sand or soil
P= covered Petri dishes: with two layers of blotters; with one layer of absorbent cotton; with five layers of paper toweling; with three thicknesses of filter paper; or with sand or soil
C= creped cellulose paper wadding (0.3-inch thick Kimpak or equivalent) covered with a single thickness of blotter through which holes are punched for the seed that are pressed for about one-half their thickness into the paper wadding
TC= on top of creped cellulose paper without a blotter
RB= blotters with raised covers, prepared by folding up the edges of the blotter to form a good support for the upper fold which serves as a cover, preventing the top from making direct contact with the seeds.

(8) *Temperature.* A single numeral indicates a constant temperature. Two numerals separated by a dash indicate an alternation of temperature, the test to be held at the first temperature for approximately 16 hours and at the second temperature for approximately 8 hours per day. The temperature shall be determined at the substratum level and shall be as uniform as possible throughout the germination chamber. (A sharp alternation of temperature, such as obtained by hand transfer, may be beneficial in breaking dormancy.) If tests are not subjected to alternating temperatures over weekends and on holidays, they are to be held at the first-mentioned temperature during this time. In cases where two temperatures are indicated (separated by a semicolon) the first temperature shall be regarded as the regular method and the second as an alternate method.

(9) Paper substrata must be free of chemicals toxic to germinating seed and seedling growth. If root injury occurs from toxicity of a paper substratum or from the use of potassium nitrate, retests shall be made on soil or on a substratum moistened with water.

(10) *Ethephon.* This term means a 29 parts per million (0.0029 percent) solution of ethephon [(2-chloroethyl) phosphonic acid] which shall be used to moisten the substratum. This solution is prepared by mixing 0.6 ml of a stock solution with 5,000 ml of distilled water. The stock solution contains 24 grams of active material per 100 ml of propylene glycol or two pounds of active material per gallon. A solution which is five times this concentration (5 x 29 ppm) may be used for extremely dormant seeds, provided seeds are transferred to substratum moistened with water after 1 to 3 days.

(11) *Ethylene.* This term means that five (5) ml of ethylene gas per cubic foot (176.57 ml/m^3) of germinator space is injected into a germinator in which peanut seeds in moist rolled towels have been placed. Following injection of the ethylene, the germinator is kept closed until the first count (5 days). If the germinator door is opened for the purpose of checking or rewetting the samples, another injection of ethylene at the same rate shall be made.

(b) *Special procedures and alternate methods for germination referred to in table 2*—(1) *Alyceclover; swollen seeds.* At the conclusion of the 21-day test period, carefully pierce the seed coat with a sharp instrument and continue the test for 5 additional days. Alternate method: The swollen seeds may be placed at 20 °C for 48 hours and then at 35 °C for 3 additional days.

(2) *Bahiagrass; removal of glumes.* On all varieties except ''Pensacola,'' remove the enclosing structures (glumes, lemma, and palea) from the caryopsis with the aid of a sharp scalpel. If the

seed is fresh or dormant, lightly scratch the surface of the caryopsis.

(3) *Beet, Swiss chard; preparation of seed for test.* Before the seeds are placed on the germination substratum, they shall be soaked in water for 2 hours, using at least 250 ml of water per 100 seeds, then washed in running water and the excess water blotted off. The temperature of the soaking and washing water should be no lower than 20 °C. Samples producing excessive discoloration of the hypocotyl or root should be retested in soil or by washing in running water for 3 hours and testing on ''Kimpak,'' keeping the seed covered with slightly moist blotters. Sugar beets may require 16 hours soaking in water at 25 °C, followed by rinsing and then drying for 2 hours at room temperature.

(4) *Buffelgrass; alternate method for dormant seed.* The caryopses shall be removed from the fascicles and placed on blotters moistened with a 0.2 percent solution of KNO_3, in petri dishes. The seeds from a fascicle should be arranged so they will not be confused with seeds from other fascicles during the test. The seeds are then prechilled at 5 °C for 7 days and tested at 30 °C in light for 21 additional days. Firm ungerminated seeds remaining at the conclusion of the test should be scratched lightly and left in test for 7 additional days.

(5) *Cotton* (*Gossypium spp.*)*; dormant samples.* Samples of cottonseed which do not respond to the usual method should be placed in a closed container with water and shaken until the lint is thoroughly wet. The excess moisture should then be blotted off.

(6) *Endive* (*Cichorium endivia*)*; dormant samples.* Add about ⅛ inch of tap water at the beginning of the test and remove excess water after 24 hours.

(7) *Green needlegrass*; two test methods as prescribed in table 2 shall be used on each sample:

(i) For method 1, acid scarify 400 seeds for 10 minutes in concentrated sulfuric acid (95 to 98 percent H_2SO_4). Rinse seeds and dry on blotters for 16 hours, then place seeds on blotters moistened with a solution of 0.055 percent (500 ppm gibberellic acid GA_3) and 0.46 percent (3,000 ppm) thiram and germinate 14 days.

(ii) For method 2, plant 400 seeds on blotters moistened with a 0.2 percent solution of KNO_3 and germinate 14 days. Refer to § 201.57a(c).

(iii) Report the results of method 2 as the percentage germination. If the number in method 2 is less than method 1, subtract the results of method 2 from method 1 and report the difference as dormant seed.

(8) *Rescue grass* (*Bromus catharticus*)*; dormant samples.* Wash for 48 hours in running water, or soak for 48 hours, changing the water and rinsing each morning and night.

(9) *Rice* (*Oryza sativa*)*—Alternate method.* Plant the seeds in moist sand. On the seventh day of the test add water to a depth of one-fourth inch above the sand level and leave for the remainder of the test. Only a final count is made. Dormant seeds: Presoak 24 to 48 hours in 40 °C. water. For deeply dormant seeds, presoak 24 hours in 1,000 p.p.m. ethylene chlorohydrin or 5 percent solution of sodium hypochlorite (clorox at bottle strength).

(10) *Ryegrass; fluorescence test.* The germination test for fluorescence of ryegrass shall be conducted in light [not to exceed 100 foot candles (1,076 lux)] with white filter paper as the substratum. The white filter paper should be nontoxic to the roots of ryegrass and of a texture that will resist penetration of ryegrass roots. Distilled or deionized water shall be used to moisten the filter paper. The test shall be conducted in a manner that will prevent the contact of roots of different seedlings. Roots of some seedlings produce fluorescent lines on white filter paper when viewed under ultraviolet light. First counts shall not be made before the eighth day; at that time remove only normal fluorescent seedlings. Evaluation of fluorescence shall be made under F15T8–BLB or comparable ultraviolet tubes in an area where light from other sources is excluded. If there are over 75 percent normal fluorescent seedlings present at the time of the first count, break the contact of the roots of the nonfluorescent seedlings from the substratum and reread the fluorescence at the time of the final count. At the final count, lift each remaining seedling, observing the path of each root since sometimes faint

fluorescence will show on the substratum as the root is lifted. Abnormal seedlings and dead seeds are not evaluated for fluorescence. See § 201.58a(a).

(11) *Trifolium, Medicago, Melilotus, and Vicia faba; temperature requirements.* A temperature of 18 °C. is desirable for *Trifolium* spp., *Medicago* spp., *Melilotus* spp., and *Vicia faba.*

(12) *Garden bean; use of calcium nitrate.* If hypocotyl collar rot is observed on seedlings, the sample involved shall be retested using a 0.3 to 0.6 percent solution of calcium nitrate ($CaNO_3$) to moisten the substratum.

(13) *Fourwing Saltbush (Atriplex canscens); preparation of seed for test.* DE-wing seeds and soak for 2 hours in 3 leters of water after which rince with approximately 3 leters of distilled water. Remove excess water, air dry for 7 days at room temperature, then test for germination as indicated in Table 2.

(c) Procedures for coated seed:

(1) Germination tests on coated seed shall be conducted in accordance with methods in paragraphs (a) and (b) of this section. However, kinds for which soaking or washing is specified in paragraph (b) shall not be soaked or washed in the case of coated seed.

(i) Coated seed units shall be placed on the substratum in the condition in which they are received without rinsing, soaking, or any other pretreatment.

(ii) Coated seed units in mixtures which are color coded or can otherwise be separated by kinds shall be germinated as separate kinds without removing the coating material.

(iii) Coated seed units in mixtures which cannot be separated by kinds without removing the coating material shall be de-coated and germinated as separate kinds. The coating material shall be removed in a manner that will not affect the germination capacity of the seeds.

(2) The moisture level of the substratum is important. It may depend on the water-absorbing capacity of the coating material. A retest may be necessary before satisfactory germination of the sample is achieved.

(3) Phytotoxic symptoms may be evident when germinating coated seeds in paper substrata. In such cases a retest in sand or soil may be necessary.

TABLE 2—GERMINATION REQUIREMENTS FOR INDICATED KINDS

Name of seed	Substrata	Temperature (°C)	First count days	Final count days	Additional directions	
					Specific requirements	Fresh and dormant seed
AGRICULTURAL SEED						
Agrotricum	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days.
Alfalfa	B, T, S	20	4	[1]7	See ¶ (b)(11)	
Alfilaria	B, T	20–30	3	14	Clip seeds	
Alyceclover	B, T	35	4	[1]21	See ¶ (b)(1) for swollen seeds	
Bahiagrass:						
Var. Pensacola	P, S	20–35	7	28	Light; see ¶ (b)(2)	See § 201.57a
All other vars.	P	30–35	3	21	Light; remove glumes; see ¶ (b)(2).	Scratch caryopses; KNO_3; see § 201.57a
Barley	B, T, S	20; 15	4	7		Prechill 5 days at 5° or 10 °C or predry
Barrelclover	B, T	20	4	[1]14	Remove seeds from bur; see ¶ (b)(11).	
Bean:						
Adzuki	B, T, S	20–30	4	[1]10		
Field	B, T, S, TC	20–30; 25	5	[1]8		
Mung	B, T, S	20–30	3	[1]7		
Beet, field	B, T, S	20–30	3	14	See ¶ (b)(3)	
Beet, sugar	B, T, S	20–30; 20	3	10	See ¶ (b)(3)	
Beggarweed, Florida	B, T	30	5	[1]28		
Bentgrass:						
Colonial	P	15–30; 10–30; 15–25	7	28	Light; KNO_3	Prechill at 5° or 10 °C for 7 days.
Creeping	P	15–30; 10–30; 15–25	7	28	Light; KNO_3	Prechill at 5° or 10 °C for 7 days.
Velvet	P	15–25; 20–30	7	21	Light; KNO_3	
Bermudagrass	P	20–35	7	21	Light; KNO_3; see ¶ (a)(9)	
Bermudagrass, giant	P	20–35	7	21	Light; KNO_3; see ¶ (a)(9)	Prechill at 10 °C for 7 days and then test at 20–35 °C; continue tests of hulled seed for 14 days and of unhulled seed for 21 days
Bluegrass:						
Annual	P	20–30	7	21	Light	
Bulbous	P, S	10	10	35	KNO_3 or soil	Prechill all samples at 5 °C for 7 days.
Canada	P	15–25; 15–30	10	28	Light; KNO_3	10–30 °C.
Glaucantha	P	15–25; 15–30	10	28	Light; KNO_3	
Kentucky	P	15–25; 15–30	10	28	Light; KNO_3	Prechill at 10 °C for 5 days.
Nevada	P	20–30	7	21	Light; KNO_3	
Rough	P	20–30	7	21	Light	
Texas	P	20–30	7	28	Light; KNO_3	Prechill at 5 °C for 2 weeks.
Wood	P	20–30	7	28	Light	
Bluejoint	TB, P	15–25	10	21	Light and KNO_3 optional	Prechill at 5 °C for 5 days
Bluestem:						
Big	P, TS	20–30	7	14	Light; KNO_3	Prechill at 5 °C for 2 weeks; see § 201.57a.
Little	P, TS	20–30	7	14	Light; KNO_3	Prechill at 5 °C for 2 weeks; see § 201.57a.
Sand	P, TS	20–30	7	14	Light; KNO_3	Prechill at 5 °C for 2 weeks; see § 201.57a.
Yellow	P, TS	20–30	5	14	Light; KNO_3	Prechill at 5 °C for 2 weeks; see § 201.57a.
Bottlebrush-squirreltail	P, B	20; 15	10	14		See § 201.57a.

Brome:						
Field	P, TB	15–25; 20–30	6	14	Light	Prechill at 10 °C for 5 days.
Meadow	B, T, TB	20–30	6	14	Light optional	
Mountain	P	20–30	6	14	Light.	
Smooth	P, B, TB	20–30	6	14	Light optional	Prechill at 5° or 10°C for 5 days, then test at 30°C for 9 additional days.
Broomcorn	B, T, S	20–30	3	10		
Buckwheat	B, T	20–30	3	6		
Buffalograss:						
(Burs)	P, TB, TS	20–35	7	28	Light; KNO_3	Prechill at 5°C for 6 weeks; test 14 additional days; see § 201.57a.
(Caryopses)	P	20–35	5	14	Light; KNO_3	See § 201.57a.
Buffelgrass	S	30	7	28	Light; press fascicles into well-packed soil and prechill at 5°C for 7 days.	See ¶ (b)(4); see § 201.57a.
Burclover, California	B, T	20	4	[1]14	Remove seeds from bur; see ¶ (b)(11).	
Burclover, spotted	B, T	20	4	[1]14	Remove seeds from bur; see ¶ (b)(11).	
Burnet, littler	B, T	15	5	14		
Buttonclover	B, T	20	4	[1]10	See ¶ (b)(11)	15°C.
Canarygrass	B, T	20–30	3	7		
Canarygrass, reed	P	20–30	5	21	Light; KNO_3	
Carpetgrass	P	20–35	10	21	Light	KNO_3.
Castorbean	T, S	20–30	7	14	Remove caruncle if mold interferes with test.	
Chess, soft	P	20–30	7	14	Light	Prechill at 5° or 10°C for 7 days.
Chickpea	T,S	20–30	3	[1]7		
Clover:						
Alsike	B, T, S	20	3	[1]7	See ¶ (b)(11)	15°C.
Arrowleaf	B, T	20; 15	4	[1]14	See ¶ (b)(11)	
Berseem	B, T, S	20	3	[1]7	See ¶ (b)(11)	15°C.
Cluster	B, T	20	4	[1]10	See ¶ (b)(11)	15°C.
Crimson	B, T, S	20	4	[1]7	See ¶ (b)(11)	15°C.
Kenya	B, T, S	20	3	[1]7		
Ladino	B, T, S	20	3	[1]7	See ¶ (b)(11)	15°C.
Lappa	B, T	20	3	[1]7	See ¶ (b)(11)	15°C.
Large hop	B, T	20	4	[1]14	See ¶ (b)(11)	15°C.
Persian	B, T	20	3	[1]7	See ¶ (b)(11)	15°C.
Red	B, T, S	20	4	[1]7	See ¶ (b)(11)	15°C.
Rose	B, T	20	4	[1]10	See ¶ (b)(11)	15°C.
Small hop	B, T	20	4	[1]14	See ¶ (b)(11)	15°C.
Strawberry	B, T	20	3	[1]7	See ¶ (b)(11)	15°C.
Sub	B, T	20	4	[1]14	See ¶ (b)(11)	15°C.
White	B, T, S	20	3	[1]7	See ¶ (b)(11)	15°C.
Corn:						
Field	B, T, S, TC	20–30; 25	4	7		
Pop	B, T, S, TC	20–30; 25	4	7		
Cotton	B, T, S	20–30; 30	4	[1]12		Test by alternate method; see ¶ (b)(5).
Cowpea	B, T, S	20–30	5	[1]8		

TABLE 2—GERMINATION REQUIREMENTS FOR INDICATED KINDS—Continued

Name of seed	Substrata	Temperature (°C)	First count days	Final count days	Additional directions	
					Specific requirements	Fresh and dormant seed
Crambe	T	25	3	7		
Crested dogtail	P	20–30	10	21	Light	Prechill at 5° or 10 °C for 3 days.
Crotalaria:						
Lance	B, T, S	20–30	4	[1]10		
Showy	B, T, S	20–30	4	[1]10		
Slenderleaf	B, T, S	20–30	4	[1]10		
Striped	B, T, S	20–30	4	[1]10		
Sunn	B, T, S	20–30	4	[1]10		
Crownvetch	B, T, S	20	7	[1]14		
Dallisgrass	P	20–35	7	21	Light; KNO_3	
Dichondra	B, T	20–30	7	[1]28		
Drop seed, sand	P	5–35; 15–35	5	14	Light; KNO_3	Prechill at 5 °C for 4 weeks; see § 201.57a.
Emmer	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days or predry.
Fescue:						
Chewings	P	15–25	7	21	Light and KNO_3 optional	Prechill at 5° or 10 °C for 5 days.
Hair	P	10–25	10	28	KNO_3	
Hard	P	15–25	7	21	Light and KNO_3 optional	
Meadow	P	15–25; 20–30	5	14	Light and KNO_3 optional	
Red	P	15–25	7	21	Light and KNO_3 optional	
Sheep	P	15–25	7	21	Light and KNO_3 optional	
Tall	P	15–25; 20–30	5	14	Light and KNO_3 optional	Prechill at 5° or 10 °C for 5 days and test for 21 days.
Flax	B, T, S	20–30	3	7		
Galletagrass	P, B	20; 25; 20–30	4	10		See § 201.57a
Grama:						
Blue	P, TB	20–30	7	14	Light	KNO_3; see § 201.57a.
Side-oats	P	15–30	7	14	Light; KNO_3	See § 201.57a.
Guar	B, T, S	30; 20–30	5	[1]14		
Guineagrass	P	15–35	10	28	Light; KNO_3 optional	
Hardinggrass	P	10–30	7	28	Light	KNO_3.
Alternate method	P	15–25	7	14	Light; presoak at 15 °C for 24 hrs.	
Hemp	B, T	20–30	3	7		
Indiangrass, yellow	P, TS	20–30	7	14	Light; KNO_3	Prechill at 5 °C for 2 weeks; see § 201.57a.
Indigo, hairy	B, T	20–30	5	[1]14		
Japanese lawngrass	P	35–20	10	28	Light; KNO_3	
Johnsongrass	P	20–35	7	35	Light	KNO_3; see § 201.57a.
Kenaf	T, B	20–30	4	[1]8		
Kochia, forage	P	20	4	14		See § 201.57a.
Kudzu	B, T	20–30	5	[1]14		
Lentil	B, T	20	5	[1]10		
Lespedeza:						
Korean	B, T, S	20–35	5	[1]14		
Sericea	B, T, S	20–35	7	[1]21		
Siberian	B, T, S	20–35	7	[1]21		

Striate	B, T, S	20–35	7	[1]14		
Lovegrass, sand	P	20–30	5	14	Light; KNO_3	Prechill at 5° or 10 °C for 6 weeks; see § 201.57a.
Lovegrass, weeping	P	20–35	5	14	Light	KNO_3; see § 201.57a.
Lupine:						
Blue	B, T, S	20	4	[1]10		
White	B, T	20	3	[1]10		
Yellow	B, T	20	7	[1]10		
Manilagrass	P	35–20	10	28	Light; KNO_3	
Meadow foxtail	P	20–30	7	14	Light	
Medic, black	B, T, S	20	4	[1]7	See ¶ (b)(11)	
Milkvetch	B, T	20	6	[1]14		
Alternate method	B, TB, T	15–25	10	[1]21		
Millet:						
Browntop	B, P, T	20–30; 30	4	14	Light and KNO_3 optional	Predry at 35° or 40 °C for 7 days and test at 30 °C.
Alternate method	B, P, T	5–35	4	14	Light; KNO_3	
Foxtail	B, T	15–30; 20–30	4	10		
Japanese	B, T	20–30	4	10		
Pearl	B, T	20–30	3	7		
Proso	B, T	20–30	3	7		
Molassesgrass	P	20–30	7	21	Light	
Mustard:						
Black	P	20–30	3	7	Light	KNO_3 and prechill at 10 °C for 3 days.
India	P	20–30	3	7	Light	Prechill at 10 °C for 7 days and test for 5 days; KNO_3.
White	P	20–30	3	5	Light	
Napiergrass	B, T	20–30	3	10		
Needlegrass, green:						
Method 1	P	15–30	7	14	H_2SO_4,GA_3 and thiram; dark; see ¶(b)(7).	
Method 2	P	15–30	7	14	KNO_3; dark; see ¶(b)(7)	
Oat	B, T, S	20; 15	5	10	Prechill at 5° or 10 °C for 5 days and test for 7 days or predry and test for 10 days..	
Oatgrass, tall	P	20–30	6	14	Light	
Orchardgrass	P, TS	15–25	7	21	Light; germination more rapid on soil.	Prechill at 5° or 10 °C for 7 days.
Panicgrass, blue	P, TS	20–30	7	28	Light	
Panicgrass, green	P	15–35	10	28	Light; KNO_3 optional	
Pea, field	B, T, S	20	3	[1]8		
Peanut	B, T, S	20–30; 25	5	[1]10	Remove shells	Ethephon or ethylene; see ¶ (a) (10) and (11).
Rape:						
Annual	B, T	20–30	3	7		
Bird	P	20–30	3	10	Light	KNO_3.
Turnip	B, T	20–30	3	7		
Winter	B, T	20–30	3	7		
Redtop	P, TB	20–30	5	10	Light	KNO_3.
Rescuegrass	P, S	10–30	7	28	Light; see ¶ (b)(8) for alternate method.	In soil at 15°C.
Rhodesgrass	P	20–30	6	14	Light; KNO_3	
Rice	T, S	20–30; 30	5	14	See ¶ (b)(9) for alternate method.	Presoak; see ¶ (b)(9).

TABLE 2—GERMINATION REQUIREMENTS FOR INDICATED KINDS—Continued

Name of seed	Substrata	Temperature (°C)	First count days	Final count days	Additional directions	
					Specific requirements	Fresh and dormant seed
Ricegrass, Indian	P	15	7	42		Prechill at 5 °C for 4 weeks and test for 21 additional days; see § 201.57a.
Alternate method	S	5–15; 15; 15–25	7	28		Dark; prechill in soil at 5 °C for 4 weeks; see § 201.57a.
Roughpea	B, T	20	7	[1]14		
Rye	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days or predry.
Rye, mountain	B, T	20; 15	4	7		See § 201.57a.
Ryegrass:						
Annual	P, TB	15–25	5	14	Light optional; see ¶ (b)(10) for fluorescence test.	Light; KNO_3; prechill at 5° or 10°C for 5 days and test at 15–25 °C; if still dormant prechill for 3 days and continue test at 15–25 °C an additional 4 days.
Intermediate	P, TB	15–25	7	14	Light	KNO_3 and prechill at 5° or 10 °C for 5 days and test at 15–25°C; if still dormant rechill for 3 days and continue test at 15–25 °C an additional 4 days.
Perennial	P, TB	15–25	5	14	Light optional; see ¶ (b)(10) for fluorescence test.	Light; KNO_3; prechill at 5° or 10 °C for 5 days and test at 15–25 °C; if still dormant rechill for 3 days and continue test at 15–25 °C an additional 4 days.
Wimmera	P, TB	15–25; 20–30	5	14	Light optional	Light; KNO_3; prechill at 5° or 10 °C for 5 days and test at 15–25 °C; if still dormant rechill for 3 days and continue test at 15–25 °C an additional 4 days.
Safflower	P, B, T, S	15; 20	4	14	Light at 15 °C	
Sagewort, Louisiana	P	15–25	7	14	Light	
Sainfoin	B, T	20–30	4	[1]14		
Saltbush, fourwing	B	20	5	14	See ¶ (b)(13)	Prechill at 5 °C for 7 days.
Alternate method	B	15	.....	21		
Sesame	B, T, TB	20–30	3	6		
Sesbania	B, T	20–30	5	[1]7		
Smilo	P	20–30	7	42	Light	Prechill at 5 °C for 2 weeks; see § 201.57a.
Sorghum	B, T, S	20–30	4	10		Prechill grain vars. at 5 ° or 10 °C for 5 days; test sweet vars. at 30–45 °C, maintaining 45 °C for 2–4 hours per day.
Sorghum almum	T, S	20–35; 15–35	5	21		Prechill at 5 °C for 5 days; on the 10th day of test, clip or pierce the distal end of ungerminated seeds.
Sorghum-sudangrass	B, T, S	20–30; 25	4	10		Prechill at 5° or 10 °C for 5 days.
Sorgrass[2]	B, T, S	15–35; 20–35	5	21		Prechill at 5° or 10 °C for 7 days.
Sourclover	B, T	20	3	[1]14	See ¶ (b)(11)	
Soybean	B, T, S, TC	20–30; 25	5	[1]8		
Spelt	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days, or predry.
Sudangrass	B, T, S	20–30; 15–30	4	10		Prechill at 10 °C for 5 days.
Sunflower	T, B	20–30	3	7		
Sweetclover:						
White	B, T, S	20	4	[1]7	See ¶ (b)(11)	
Yellow	B, T, S	20	4	[1]7	See ¶ (b)(11)	
Sweet vernalgrass	P	20–30	6	14	Light	
Sweetvetch, northern	B, TB, T	15–25; 20	14	[1]28		
Switchgrass	P, TS	15–30	7	14	Light; KNO_3	Prechill at 5 °C for 2 weeks; see § 201.57a.

Timothy	P, TB	15–25; 20–30	5	10	Light; see ¶ (a)(9)	KNO_3 and prechill at 5 ° or 10 °C for 5 days.
Timothy, turf	P, TB	15–25; 20–30	5	10	Light	KNO_3 and prechill at 5 ° or 10 °C for 5 days.
Tobacco	P, TB	20–30	7	14	Light	
Trefoil:						
Big	B, T	20	5	[1]12		
Birdsfoot	B, P, T	20	5	[1]12		
Triticale	B, T, S	20; 15	4	7		Prechill at 5 ° or 10 °C for 5 days, or predry.
Vaseygrass	P	20–35	7	21	Light	KNO_3.
Veldtgrass	P	10–30	7	28	Light	See § 201.57a.
Velvetbean	B, T, S, C	20–30	3	[1]14		
Velvetgrass	P	20–30	6	14	Light	
Vetch:						
Common	B, T	20	5	[1]10		
Hairy	B, T	20	5	[1]14		
Hungarian	B, T	20	5	[1]10		
Monantha	B, T	20	5	[1]10		
Narrowleaf	B, T	20	5	[1]14		
Purple	B, T	20	5	[1]10		
Woollypod	B, T	20	5	[1]14		Prechill at 10 °C for 5 days, test at 15 °C.
Wheat:						
Common	B, T, S	20; 15	4	7		Prechill at 5 ° or 10 °C for 5 days, or predry.
Club	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days, or predry.
Durum	B, T, S	20; 15	4	10		Prechill at 5° or 10 °C for 5 days, or predry.
Polish	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days, or predry.
Poulard	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days, or predry.
Wheat Agrotricum	B, T, S	20; 15	4	7		Prechill at 5° or 10 °C for 5 days, or predry.
Wheatgrass:						
Beardless	P, TB	15–25	7	14	Light and KNO_3 optional	KNO_3 and prechill at 5° or 10 °C for 7 days.
Fairway crested	P, TB	15–25; 20–30	5	14	Light and KNO_3 optional	KNO_3 and prechill at 5° or 10 °C for 7 days.
Standard crested	P, TB	15–25; 20–30	5	14	Light and KNO_3 optional	KNO_3 and prechill at 5° or 10 °C for 7 days.
Intermediate	P	15–25	5	28	Light and KNO_3 optional	KNO_3 and prechill at 5° or 10 °C for 7 days.
Alternate method	P	20–30	5	28	Light	
Pubescent	P	15–25	5	28	Light and KNO_3 optional	KNO_3 and prechill at 5° or 10 °C for 7 days.
Alternate method	P	20–30	5	28	Light	
Siberian	P, TB	15–25	7	14	Light and KNO_3 optional	KNO_3 and prechill at 5° or 10 °C for 7 days.
Slender	P, TB	15–25; 10–30	5	14	Light and KNO_3 optional	Prechill at 5° or 10 °C for 5 days; if still dormant on the 10th day, rechill 2 days, then place at 20–30 °C for 4 days.
Streambank	P, TB	15–25	5	14	Light and KNO_3 optional	Prechill at 5° or 10 °C for 5 days.
Tall	P	15–25	5	21	Light and KNO_3 optional	Prechill at 5° or 10 °C for 5 days.
Alternate method	P	20–30	5	21	Light	Prechill at 5° or 10 °C for 5 days.
Western	B, P, T	15–30	7	28	Dark	KNO_3 or soil; see § 201.57a.
Wildrye:						
Basin	P	15–25	10	21		See § 201.57a.
Canada	P	15–30	7	21	Light	Prechill at 5 °C for 2 weeks.
Russian	P	20–30	5	14	Light	Prechill at 5° or 10 °C for 5 days.
VEGETABLE SEED						
Artichoke	B, T	20–30	7	21		
Asparagus	B, T, S	20–30	7	21		
Asparagusbean	B, T, S	20–30	5	[1]8		

TABLE 2—GERMINATION REQUIREMENTS FOR INDICATED KINDS—Continued

Name of seed	Substrata	Temperature (°C)	First count days	Final count days	Additional directions	
					Specific requirements	Fresh and dormant seed
Bean:						
Garden	B, T, S, TC	20–30; 25	None	[1]8		See ¶ (b)(12).
Lima	B, T, C, S	20–30	5	[1]9		
Runner	B, T, S	20–30	5	[1]9		
Beet	B, T, S	20–30	3	14	See ¶ (b)(3)	
Broadbean	S, C	20	4	[1]14	See ¶ (b)(11)	Prechill at 10 °C for 3 days.
Broccoli	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; KNO_3 and light.
Brussels sprouts	B, P, T	20–30	3	10	Prechill at 5° or 10 °C for 3 days; KNO_3 and light.	
Burdock, great	B, T	20–30	7	14		
Cabbage	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; KNO_3 and light.
Cabbage, Chinese	B, T	20–30	3	7	.	
Cabbage, tronchuda	B, P	20–30	3	10		Prechill at 5° or 10 °C for 3 days; KNO_3 and light.
Cardoon	B, T	20–30	7	21		
Carrot	B, T	20–30	6	14		
Cauliflower	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; KNO_3 and light
Celeriac	P	5–25; 20	10	21	Light; see ¶ (a)(9)	
Celery	P	15–25; 20	10	21	Light; see ¶ (a)(9)	
Chard, Swiss	B, T, S	20–30	3	14	See ¶ (b)(3)	
Chicory	P, TS	20–30	5	14	Light; KNO_3 or soil; see ¶(a)(9)	
Chives	B, T	20	6	14		
Citron	B, T	20–30	7	14	Soak seeds 6 hrs	Test at 30 °C.
Collards	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; KNO_3 and light .
Corn, sweet	B, T, S, TC	20–30; 25	4	7		
Cornsalad	B, T	15	7	28	Test at 10 °C..	
Cowpea	B, T, S	20–30	5	[1]8		
Cress:						
Garden	B, P, T	15	4	10		Light.
Upland	P, TB	20–35	4	7	Light; KNO_3	
Water	P	20–30	4	14	Light	
Cucumber	B, T, S	20–30	3	7	Keep substratum on dry side; see ¶ (a)(3).	
Dandelion	P, TB	20–30	7	21	Light; see ¶ (a)(9)	
Dill	B, T	20–30	7	21		
Eggplant	P, TB, RB, T	20–30	7	14	Light; KNO_3..	
Endive	P, TS	20–30	5	14	Light; KNO_3 or soil	See ¶ (b)(6).
Gherkin, West India	B, T, S	20–30	3	7	Test at 30 °C..	
Kale	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; $KNO_3$and light.
Kale, Chinese	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; $KNO_3$and light.
Kale, Siberian	B, P, T	20–30; 20	3	7		
Kohlrabi	B, P, T	20–30	3	10		Prechill at 5° or 10 °C for 3 days; KNO_3 and light.
Leek	B, T	20	6	14		

Lettuce	P	20	None	7	Light	Prechill at 10 °C for 3 days or test at 15 °C.
Melon	B, T, S	20–30	4	10	Keep substratum on dry side; see ¶ (a)(3).	
Mustard, India	P	20–30	3	7	Light	Prechill at 10 °C for 7 days and test for 5 additional days; KNO_3.
Mustard, spinach	B, T	20–30	3	7		
Okra	B, T	20–30	4	[1]14		
Onion	B, T	20	6	10		
Alternate method	S	20	6	12		
Onion, Welsh	B, T	20	6	10		
Pak-choi	B, T	20–30	3	7		
Parsley	B, T, TS	20–30	11	28		
Parsnip	B, T, TS	20–30	6	28		
Pea	B, T,S	20	5	[1]8		
Pepper	TB, RB, T	20–30	6	14		Light and KNO_3.
Pumpkin	B, T, S	20–30	4	7	Keep substratum on dry side; see ¶ (a)(3).	
Radish	B, T	20	4	6		
Rhubarb	TB, TS	20–30	7	21	Light	
Rutabaga	B, T	20–30	3	14		
Sage	B, T, S	20–30	5	14		
Salsify	B, T	15	5	10	Prechill at 10 °C for 3 days..	
Savory, summer	B, T	20–30	5	21		
Sorrel	P, TB, TS	20–30	3	14	Light	Test at 15 °C.
Soybean	B, T, S, TC	20–30; 25	5	[1]8		
Spinach	TB, T	15;10	7	21	Keep substratum on dry side; see ¶ (a)(3).	
Spinach, New Zealand	T	15; 20	5	21	Soak fruits overnight (16 hrs), air dry 7 hrs; plant in very wet towels; do not rewater unless later counts exhibit drying out.	On 21st day scrape fruits and test for 7 additional days.
Alternate method	B, T	15	5	21	Remove pulp from basal end of fruit.	
Squash	B, T, S	20–30	4	7	Keep substratum on dry side; see ¶ (a)(3).	
Tomato	B, P, RB, T	20–30	5	14		Light; KNO_3.
Tomato, husk	P, TB	20–30	7	28	Light; KNO_3	
Turnip	B, T	20–30	3	7		
Watermelon	B, T, S	20–30; 25	4	14	Keep substratum on dry side; see ¶ (a)(3).	Test at 30 °C.

[1] Hard seeds may be present. (See § 201.57)
[2] Rhizomatous derivatives of a johnsongrass sorghum cross or a johnsongrass sudangrass cross.

[20 FR 7928, Oct 21, 1955]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 201.58, see the List of CFR Sections Affected in the Finding Aids section of this volume.

EXAMINATIONS IN THE ADMINISTRATION OF THE ACT

§ 201.58a Indistinguishable seeds.

When the identification of the kind, variety, or type of seed or determination that seed is hybrid is not possible by seed characteristics, identification may be based upon the seedling, growing plant or mature plant characteristics according to such authentic information as is available.

(a) *Ryegrass.* In determining the pure seed percentage of perennial ryegrass and annual ryegrass, 400 seeds shall be grown on white filter paper and the number of fluorescent seedlings determined under ultraviolet light at the end of the germination period (see § 201.58(b)(10)).

(1) Fluorescence results are to be determined as test fluorescence level (TFL) to two decimal places as follows:

$$\%\ \text{TFL} = \frac{\text{Number of normal fluorescent seedlings}}{\text{Total number of normal seedlings}} \times 100$$

(2) The percentage of perennial ryegrass is calculated as follows:

$$\%\ \text{Perennial ryegrass} = \frac{\%\ \text{VFL (annual)} - \%\ \text{TFL}}{\%\ \text{VFL (annual)} - \%\ \text{VFL (perennial)}} \times \%\ \text{Pure ryegrass}$$

where VFL=Variety fluorescence level.

(3) Using results from the above formula, the percentage of annual ryegrass is calculated as follows:

% Annual Ryegrass = % Pure Ryegrass − % Perennial Ryegrass

(4) If the test fluorescence level (TFL) of a perennial ryegrass is equal to or less than the variety fluorescence level (VFL) described for the variety, all pure ryegrass is considered to be perennial ryegrass and the formula is not applied.

(5) If the test fluorescence level (TFL) of an annual ryegrass is equal to or greater than the variety fluorescence level (VFL) described for the variety, all pure ryegrass is considered to be annual ryegrass and the formula is not applied.

(6) A list of variety fluorescence level (VFL) descriptions for perennial ryegrass varieties which are more than 0 percent fluorescent and annual ryegrass varieties which are less than 100 percent fluorescent is maintained and published by the National Grass Variety Review Board of the Association of Official Seed Certifying Agencies (AOSCA). If the variety being tested is not stated or the fluorescence level has not been described, the fluorescence level shall be considered to be 0 percent for perennial ryegrass and 100 percent for annual ryegrass. Both VFL (annual) and VFL (perennial) values must always be entered in the formula. If a perennial ryegrass variety is being tested, the VFL (annual) value is 100 percent. If an annual ryegrass variety is being tested, the VFL (perennial) value is 0 percent. For blends the fluorescence level shall be interpolated according to the portion of each variety claimed to be present.

(b) *Sweetclover.* To determine the presence of yellow sweetclover in samples of white sweetclover, at least 400 seeds shall be subjected to the chemical test as follows:

(1) Preparation of test solution: Add 3 grams of cupric sulfate ($CuSO_4$) to 30 ml of household ammonia (NH_4OH, approximately 4.8 percent) in a stoppered bottle to form tetraamminecopper sulfate ($[Cu(NH_3)_4]SO_4$) solution used for

this test. After mixing, a light blue precipitate of cupric hydroxide ($Cu(OH)_2$) should form. If no precipitate forms, add additional $CuSO_4$ until a precipitate appears. Since the strength of household ammonia can vary, formation of a precipitate indicates that a complete reaction has taken place between $CuSO_4$ and NH_4OH; otherwise fumes from excess ammonium hydroxide may cause eye irritation.

(2) Preparation of seeds: To insure imbibition, scratch, prick, or otherwise scarify the seed coats of the sweetclover seeds being tested. Soak seeds in water for 2 to 5 hours in a glass container.

(3) Chemical reaction: When seeds have imbibed, remove excess water and add enough test solution to cover the seeds. Seeds coats of yellow sweetclover will begin to stain dark brown to black; seed coats of white sweetclover will be olive or yellow-green. Make the separation within 20 minutes, since the seed coats of white sweetclover will eventually turn black also.

(4) Calculation of results: Count the number of seeds which stain dark brown or black and divide by the total number of seeds tested; multiply by the pure seed percentage for Melilotus spp.; the result is the percentage of yellow sweetclover in the sample. The percentage of white sweetclover is found by subtracting the percentage of yellow sweetclover from the percentage of Melilotus spp. pure seed.

(c) *Wheat.* In determining varietal purity, the phenol test may be used. From the pure seed sample count four replicates of 100 seeds each. Soak the seed in distilled water for 16 hours; then flush with tap water and remove the excess water from the surface of the seeds. Place two layers of filter paper in a container and moisten with a 1 percent phenol (C_6H_5OH) solution. Place the seed, palea side down, on the two layers of filter paper and cover the container. A preliminary observation may be made at 2 hours. At 4 hours, record the number of seeds in each of the following color categories:

(1) Ivory.
(2) Fawn.
(3) Light Brown.
(4) Brown.
(5) Brown Black.

(d) *Soybean.* In determining the varietal purity, the peroxidase test may be used. Remove and place the dry seed coat from seeds into individual test tubes or suitable containers. Add 10 drops (0.5–1.0 ml) of 0.5 percent guaiacol ($C_7H_8O_2$) to each test tube. After waiting 10 minutes add one drop (about 0.1 ml) of 0.1 percent hydrogen peroxide (H_2O_2). One minute after adding hydrogen peroxide, record the seed coat as peroxidase positive (high peroxidase activity) indicated by a reddish-brown solution or peroxidase negative (low peroxidase activity) indicated by a colorless solution in the test tube. Various sample sizes may be used for this test. Test results shall include the sample size tested.

(e) *Oat.* In determining the varietal purity, the fluorescence test may be used. Place at least 400 seeds on a black background under a F15T8–BLB or comparable ultraviolet tube(s) in an area where light from other sources is excluded. Seeds are considered fluorescent if the lemma or palea fluoresce or appear light in color. ''Partially fluorescent'' seeds shall be considered fluorescent. Seeds are considered nonfluorescent if the lemma and palea do not fluoresce and appear dark in color under the ultraviolet light.

[59 FR 64514, Dec. 14, 1994]

EDITORIAL NOTE: For Federal Register citations affecting §201.58a, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 201.58b Origin.

The presence of incidental weed seeds, foreign matter, or any other existing circumstances shall be considered in determining the origin of seed.

[5 FR 35, Jan. 4, 1940. Redesignated at 20 FR 7940, Oct. 21, 1955]

§ 201.58c Detection of captan, mercury, or thiram on seed.

The bioassay method may be used according to the procedure given in Association of Official Seed Analysts, Handbook No. 26, ''Microbiological Assay of Fungicide-treated Seeds'', May 1964.

[38 FR 12733, May 15, 1973]

§ 201.58d Fungal endophyte test.

A fungal endophyte test may be used to determine the amount of fungal endophyte (*Acremonium* spp.) in certain grasses.

(a) Method of preparation of aniline blue stain for use in testing grass seed and plant material for the presence of fungal endophyte:

(1) Prepare a 1 percent aqueous aniline blue solution by dissolving 1 gram aniline blue in 100 ml distilled water.

(2) Prepare the endophyte staining solution of one part of 1 percent aniline blue solution with 2 parts of 85 percent lactic acid ($C_3H_6O_3$).

(3) Use stain as-is or dilute with water if staining is too dark.

(b) Procedure for determining levels of fungal endophyte in grass seed:

(1) Take a sub-sample of seed (1 gram is sufficient) from the pure seed portion of the kind under consideration.

(2) Digest seed at room temperature for 12–16 hours in a 5 percent sodium hydroxide (NaOH) solution or other temperature/time combination resulting in adequate seed softening.

(3) Rinse thoroughly in running tap water.

(4) De-glume seeds and place on a microscope slide in a drop of endophyte staining solution. Slightly crush the seeds. Use caution to prevent carryover hyphae of fungal endophyte from one seed to another.

(5) Place coverglass on seed and apply gentle pressure.

(6) Examine with compound microscope at 100–400x magnification, scoring a seed as positive if any identifiable hyphae are present.

(7) Various sample sizes may be used for this test. Precision changes with sample size; therefore, the test results must include the sample size tested.

(c) Procedure for determining levels of fungal endophyte in seedlings from seed samples suspected to contain fungal endophyte:

(1) Select seeds at random and germinate.

(2) Examine seedlings from the sample germinated after growing for a minimum of 48 days.

(3) Remove the outermost sheath from the seedling. Tissue should have no obvious discoloration from saprophytes and should have as little chlorophyll as possible.

(4) Isolate a longitudinal section of leaf sheath approximately 3–5 mm in width.

(5) Place the section on a microscope slide with the epidermis side down.

(6) Stain immediately with the endophyte staining solution as prepared in paragraph (a) (2) and (3) of this section. Allow dye to remain at least 15 seconds but no more than one minute.

(7) Blot off the excess dye with tissue paper. Sections should remain on the slide, but may adhere to the tissue paper; if so, remove and place in proper position on the slide.

(8) Place a coverglass on the sections and flood with water.

(9) Proceed with evaluation as described in paragraph (b) (6) and (7) of this section.

[59 FR 64515, Dec. 14, 1994]

TOLERANCES

§ 201.59 Application.

Tolerances shall be recognized between the percentages or rates of occurrence found by analysis, test, or examination in the administration of the act and percentages or rates of occurrence required or stated as required by the act. Tolerances for purity percentages and germination percentages provided for in §§ 201.60 and 201.63 shall be determined from the mean of (a) the results being compared, or (b) the result found by test and the figures shown on a label, or (c) the result found by test and a standard. All other tolerances, including tolerances for pure-live seed and fluorescence, and tolerances for purity based on 10 to 1,000 seeds, seedlings, or plants shall be determined from the result or results found in the administration of the Act.

[5 FR 34, Jan. 4, 1940, as amended at 20 FR 7940, Oct. 21, 1955; 24 FR 3954, May 15, 1959; 35 FR 6108, Apr. 15, 1970]

§ 201.60 Purity percentages.

(a)(1) The tolerance for a given percentage of the purity components is the same whether for pure seed, other crop seed, weed seed, or inert matter. Wider tolerances are provided when 33 percent or more of the sample is composed of seed plus empty florets and/or

empty spikelets of the following chaffy kinds: bentgrasses, bermudagrasses, bluegrasses, bluestems, bottlebrush-squirreltail, bromes, buffalograss, buffelgrass, carpetgrass, soft chess, dallisgrass, fescues, meadow foxtail, galletagrass, guineagrass, gramas, molassesgrass, tall oatgrass, orchardgrass, redtop, rescuegrass, rhodesgrass, Indian ricegrass, ryegrasses, sweet vernalgrass, vaseygrass, veldtgrass, wheatgrasses, wildryes, and yellow indiangrass. The wider tolerances do not apply to seed devoid of hulls.

(2) To determine the tolerance for any purity percentage found in the administration of the act, the percentage found is averaged (i) with that claimed or shown on a label or (ii) with a specified standard. The tolerance is found from this average. If more than one test is made, all except any test obviously in error shall be averaged and the result treated as a single percentage.

(b) The tolerances found in columns C and D for the respective purity percentages shown in columns A and B of table No. 3 shall be used for (1) unmixed seed and (2) mixtures in which the particle-weight ratio is 1:1 to 1.49:1, inclusive. Tolerances for intermediate percentages not shown in table 3 shall be obtained by interpolation.

TABLE 3—Tolerances for Any Component of a Purity Analysis for (1) Unmixed Seed or (2) Mixed Seed in Which the Particle Weight Ratio Is 1: 1 to 1.49: 1, Inclusive

Average analysis (A)	(B)	Non-chaffy seeds (C)	Chaffy seeds (D)
99.95–100.00	0.00–0.04	0.13	0.16
99.90– 99.94	.05– .09	.20	.23
99.85– 99.89	.10– .14	.24	.29
99.80– 99.84	.15– .19	.28	.34
99.75– 99.79	.20– .24	.32	.37
99.70– 99.74	.25– .29	.35	.41
99.65– 99.69	.30– .34	.37	.45
99.60– 99.64	.35– .39	.40	.48
99.55– 99.59	.40– .44	.42	.50
99.50– 99.54	.45– .49	.44	.53
99.40– 99.49	.50– .59	.47	.57
99.30– 99.39	.60– .69	.51	.60
99.20– 99.29	.70– .79	.54	.64
99.10– 99.19	.80– .89	.57	.66
99.00– 99.09	.90– .99	.59	.70
98.75– 98.99	1.00– 1.24	.64	.75
98.50– 98.74	1.25– 1.49	.71	.82
98.25– 98.49	1.50– 1.74	.76	.89
98.00– 98.24	1.75– 1.99	.82	.95
97.75– 97.99	2.00– 2.24	.87	1.01
97.50– 97.74	2.25– 2.49	.92	1.07
97.25– 97.49	2.50– 2.74	.96	1.12
97.00– 97.24	2.75– 2.99	1.00	1.17
96.50– 96.99	3.00– 3.49	1.06	1.24
96.00– 96.49	3.50– 3.99	1.14	1.34
95.50– 95.99	4.00– 4.49	1.21	1.41
95.00– 95.49	4.50– 4.99	1.27	1.49
94.00– 94.99	5.00– 5.99	1.36	1.60
93.00– 93.99	6.00– 6.99	1.47	1.73
92.00– 92.99	7.00– 7.99	1.58	1.85
91.00– 91.99	8.00– 8.99	1.67	1.96
90.00– 90.99	9.00– 9.99	1.75	2.06
88.00– 89.99	10.00–11.99	1.87	2.19
86.00– 87.99	12.00–13.99	2.01	2.36
84.00– 85.99	14.00–15.99	2.14	2.51
82.00– 83.99	16.00–17.99	2.24	2.64
80.00– 81.99	18.00–19.99	2.35	2.76
78.00– 79.99	20.00–21.99	2.44	2.86
76.00– 77.99	22.00–23.99	2.52	2.96
74.00– 75.99	24.00–25.99	2.59	3.04
72.00– 73.99	26.00–27.99	2.65	3.12
70.00– 71.99	28.00–29.99	2.71	3.19
65.00– 69.99	30.00–34.99	2.80	3.29
60.00– 64.99	35.00–39.99	2.89	3.40
50.00– 59.99	40.00–49.99	2.96	3.48

(c) Tolerances calculated by the following formula shall be used for either chaffy or nonchaffy mixtures when the average particle-weight ratio is 1.5:1 to 20:1 and beyond:

The symbols used in the formula are as follows:

T=tolerance being calculated.

A=percent which the weight of the component with the heavier average particle-weight is of the weight of both components.

B=percent which the weight of the component with the lighter average particle-weight is of the weight of both components.

H=average particle-weight for the component with the heavier average particle-weight.

L=average particle-weight for the component with the lighter average particle-weight.

R=ratio of the average particle-weight for the component with the heavier average particle-weight to the average particle-weight for the component with the lighter average particle-weight. R=H/L.

$$T = A - \frac{100\,R\left[(100\,A/R)/(B + A/R) - T1\right]}{\left[(100\,B)/(B + A/R) + T1\right] + R\left[(100\,A/R)/(B + A/R) - T1\right]}$$

T1=regular tolerance for the kind of seed (chaffy or nonchaffy) and for (100B)/(B+A/R).

In determining the values for A and B in the formula, the sample shall be regarded as composed of two parts:

(1) The kind, type, or variety under consideration, and

(2) All other components. Values for H and L shall be obtained from the last column of Table 1, §201.46, or by laboratory tests for inert matter, weed seeds, or crop seeds where such values are not obtainable from Table 1. In computing tolerances for nonchaffy kinds the values for T1 are taken from column C of Table 3, and for chaffy kinds the values for T1 are taken from column D of Table 3.

[26 FR 10036, Oct. 26, 1961, as amended at 59 FR 64515, Dec. 14, 1994]

§201.61 Fluorescence percentages in ryegrasses.

Tolerances for 400-seed fluorescence tests shall be those set forth in the following table plus one-half the regular pure-seed tolerance determined in accordance with §201.60. When only 200 seeds of a component in a mixture are tested, an additional 2 percent shall be added to the fluorescence tolerance.

PERCENT FOUND FLUORESCENCE TOLERANCE

100	
99	1.0
98	1.6
97	2.0
96	2.3
95	2.6
94	2.9
93	3.2
92	3.4
91	3.6
90	3.8
89	4.0
88	4.1
87	4.3
86	4.5
85	4.7
84	4.8
83	4.9
82	5.0
81	5.2
80	5.3
79	5.4
78	5.5
77	5.6

PERCENT FOUND FLUORESCENCE TOLERANCE—Continued

76	5.7
75	5.8
74	5.8
73	5.9
72	6.0
71	6.1
70	6.2
69	6.2
68	6.3
67	6.3
66	6.4
65	6.5
64	6.5
63	6.5
62	6.6
61	6.6
60	6.7
59	6.7
58	6.8
57	6.8
56	6.8
55	6.8
54	6.9
53	6.9
52	6.9
51	6.9
50	6.9
49	6.9
48	6.9
47	6.9
46	6.9
45	6.9
44	6.9
43	6.9
42	6.9
41	6.9
40	6.9
39	6.8
38	6.8
37	6.8
36	6.8
35	6.7
34	6.7
33	6.7
32	6.6
31	6.6
30	6.5
29	6.5
28	6.4
27	6.4
26	6.3
25	6.2
24	6.2
23	6.1
22	6.0
21	5.9
20	5.8
19	5.7
18	5.6
17	5.5
16	5.4
15	5.3
14	5.2
13	5.0
12	4.9
11	4.7

PERCENT FOUND FLUORESCENCE TOLERANCE—Continued

10	4.6
9	4.4
8	4.2
7	4.0
6	3.7
5	3.5
4	3.2
3	2.8
2	2.4
1	1.8
0	1.0

[32 FR 12781, Sept. 6, 1967, as amended at 59 FR 64516, Dec. 14, 1994]

§ 201.62 Tests for determination of percentages of kind, variety, type, hybrid, or offtype.

Tolerances for tests for determination of percentages of kind, variety, type, hybrid, or offtype shall be those set forth in the following table, added to one-half the required pure seed tolerances determined in accordance with § 201.60, except that one-half the pure seed tolerance will not be applied in determining tolerances for hybrids labeled on the basis of the percentage of pure seed which is hybrid.

TABLE 4—Tolerances for Purity Tests, When Results Are Based on 10 to 1,000 Seeds, Seedlings, or Plants Used in a Test

Seed, seedling, or plant count percent	Number of seeds, seedlings, or plants in tests										
	10	20	30	50	75	100	150	200	400	800	1,000
100 or 0	0	0	0	0	0	0	0	0	0	0	0
98 or 2	10.3	7.3	6.0	4.6	3.8	3.3	2.7	2.3	1.6	1.2	1.0
96 or 4	14.4	10.2	8.3	6.4	5.3	4.6	3.7	3.2	2.3	1.7	1.5
94 or 6	17.5	12.4	10.1	7.8	6.4	5.5	4.5	3.9	2.9	2.1	1.9
92 or 8	20.0	14.1	11.5	8.9	7.3	6.3	5.2	4.5	3.4	2.4	2.2
90 or 10	22.1	15.7	12.8	9.9	8.1	7.0	5.7	4.9	3.8	2.8	2.4
88 or 12	24.0	17.0	13.8	10.7	8.7	7.6	6.2	5.4	4.1	3.0	2.7
86 or 14	25.7	18.1	14.7	11.4	9.3	8.1	6.6	5.7	4.5	3.2	2.9
84 or 16	26.9	19.0	15.5	12.1	9.8	8.5	7.0	6.0	4.8	3.4	3.0
82 or 18	28.2	20.0	16.4	12.6	10.3	8.9	7.3	6.3	5.0	3.6	3.2
80 or 20	29.5	20.9	16.9	13.2	10.7	9.3	7.6	6.6	5.3	3.8	3.3
78 or 22	30.5	21.6	17.6	13.6	11.0	9.6	7.9	6.8	5.5	3.9	3.5
76 or 24	31.4	22.3	18.2	14.1	11.5	9.9	8.1	7.0	5.7	4.1	3.6
74 or 26	32.3	22.8	18.6	14.4	11.8	10.2	8.3	7.2	5.8	4.2	3.7
72 or 28	33.0	23.4	19.0	14.8	12.1	10.5	8.5	7.4	6.0	4.3	3.8
70 or 30	33.7	23.8	19.5	15.1	12.3	10.7	8.7	7.5	6.2	4.4	3.9
68 or 32	34.3	24.3	19.9	15.4	12.5	10.8	8.9	7.7	6.3	4.5	4.0
66 or 34	35.0	24.7	20.2	15.7	12.7	11.0	9.0	7.8	6.4	4.6	4.0
64 or 36	35.4	25.0	20.5	15.8	12.9	11.2	9.1	7.9	6.5	4.6	4.1
62 or 38	35.5	25.4	20.6	15.9	13.0	11.3	9.2	8.0	6.6	4.7	4.2
60 or 40	36.1	25.7	20.9	16.1	13.2	11.4	9.3	8.1	6.7	4.8	4.2
58 or 42	36.2	25.7	21.0	16.2	13.3	11.5	9.4	8.1	6.8	4.8	4.2
56 or 44	36.5	25.8	21.0	16.4	13.3	11.5	9.4	8.2	6.8	4.8	4.3
54 or 46	36.8	25.8	21.2	16.4	13.4	11.6	9.5	8.2	6.9	4.9	4.3
52 or 48	36.8	25.9	21.2	16.5	13.4	11.6	9.5	8.2	6.9	4.9	4.3
50	36.8	25.9	21.3	16.5	13.4	11.6	9.5	8.2	6.9	4.9	4.3

[32 FR 12781, Sept. 6, 1967, as amended at 33 FR 10841, July 31, 1968; 35 FR 6108, April 15, 1970; 59 FR 64516, Dec. 14, 1994]

§ 201.63 Germination.

The following tolerances are applicable to the percentage of germination and also to the sum of the germination plus the hard seed when 400 or more seeds are tested.

Mean (See § 201.59)	Tolerance
96 or over	5
90 or over but less than 96	6
80 or over but less than 90	7
70 or over but less than 80	8
60 or over but less than 70	9
Less than 60	10

When only 200 seeds of a component in a mixture are tested 2 percent shall be added to the above germination tolerances.

[15 FR 2399, Apr. 28, 1950, as amended at 20 FR 7940, Oct. 21, 1955]

§ 201.64 Pure live seed.

The tolerance for pure live seed shall be determined by applying the respective tolerances to the germination plus the hard seed and the pure seed.

[5 FR 35, Jan. 4, 1940. Redesignated at 20 FR 7940, Oct. 21, 1955]

§ 201.65 Noxious weed seeds in interstate commerce.

Tolerances for rates of occurrence of noxious weed seeds shall be recognized and shall be applied to the number of noxious weed seeds found by analysis in the quantity of seed specified for noxious weed seed determinations in §§ 201.46 and 201.52. Applicable tolerances are calculated by the formula, $Y=X+1+1.96\sqrt{X}$, where X is the number labeled or represented and Y is the maximum number within tolerance. Some tolerances are listed below. Representations showing the rate of occurrence indicated in Column X will be considered within tolerance if not more than the corresponding number in Column Y are found by analysis in the administration of the Act. For numbers of seeds greater than those in the table and in case of additional or more extensive analyses, a tolerance based on a degree of certainty of 5 percent (P=0.05) will be recognized.

Number labeled or represented (X)	Maximum number within tolerances (Y)	Number labeled or represented (X)	Maximum number within tolerances (Y)
0	2	16	24
1	4	17	25
2	6	18	27
3	8	19	28
4	9	20	29
5	11	21	30
6	12	22	32
7	13	23	33
8	14	24	34
9	16	25	35
10	17	26	37
11	18	27	38
12	20	28	39
13	21	29	41
14	22	30	42
15	23		

[5 FR 35, Jan. 4, 1940, as amended at 15 FR 2399, Apr. 28, 1950. Redesignated at 20 FR 7940, Oct. 21, 1955, and amended at 26 FR 10036, Oct. 26, 1961; 32 FR 12782, Sept. 6, 1967]

§ 201.66 [Reserved]

CERTIFIED SEED

§ 201.67 Seed certifying agency standards and procedures.

In order to qualify as a seed certifying agency for purposes of section 101(a)(25) of the Federal Seed Act (7 U.S.C. 1551(a)(25)) an agency must enforce standards and procedures, as conditions for its certification of seed, that meet or exceed the standards and procedures specified in § 201.68 through 201.78.

[38 FR 25662, Sept. 14, 1973; 60 FR 57146, Nov. 14, 1995]

§ 201.68 Eligibility requirements for certification of varieties.

The certifying agency shall require the originator, developer, or owner of the variety, or agent thereof, to make the following available when eligibility for certification is requested:

(a) The name of the variety.

(b) A statement concerning the variety's origin and the breeding procedure used in its development.

(c) A detailed description of the morphological, physiological, and other characteristics of the plants and seed that distinguish it from other varieties.

(d) Evidence supporting the identity of the variety, such as comparative yield data, insect and disease resistance, or other factors supporting the identity of the variety.

(e) A statement delineating the geographic area or areas of adaptation of the variety.

(f) A statement on the plans and procedures for the maintenance of seed classes, including the number of generations through which the variety may be multiplied.

(g) A description of the manner in which the variety is constituted when a particular cycle of reproduction or multiplication is specified.

(h) Any additional restrictions on the variety, specified by the breeder, with respect to geographic area of seed production, age of stand or other factors affecting genetic purity.

(i) A sample of seed representative of the variety as marketed.

[38 FR 25662, Sept. 14, 1973. 60 FR 57146, Nov. 14, 1995]

§ 201.69 Classes of certified seed.

(a) Classes of certified seed are as follows:

(1) Breeder.
(2) Foundation.
(3) Registered.
(4) Certified.

[38 FR 25662, Sept. 14, 1973]

§ 201.70 Limitations of generations for certified seed.

The number of generations through which a variety may be multiplied shall be limited to that specified by the originating breeder or owner and shall not exceed two generations beyond the Foundation seed class with the following exceptions which may be made with the permission of the originating or sponsoring plant breeder, institution, or his designee:

(a) Recertification of the Certified class may be permitted when no Foundation seed is being maintained.

(b) The production of an additional generation of the Certified class may be permitted on a 1-year basis only, when an emergency is declared by any official seed certifying agency stating that the Foundation and Registered seed supplies are not adequate to plant the needed Certified acreage of the variety. The additional generation of Certified seed to meet the emergency need is ineligible for recertification.

[38 FR 25662, Sept. 14, 1973; 38 FR 26800, Sept. 26, 1973, as amended at 46 FR 53639, Oct. 29, 1981]

§ 201.71 Establishing the source of all classes of certified seed.

The certifying agency shall have evidence of the class and source of seed used to plant each crop being considered for certification.

[38 FR 25662, Sept. 14, 1973]

§ 201.72 Production of all classes of certified seed.

(a) Each certifying agency shall determine that genetic purity and identity are maintained at all stages of certification including seeding, harvesting, processing, and labeling of the seed.

(b) The unit of certification shall be a clearly defined field or fields.

(c) One or more field inspections shall be made (1) previous to the time a seed crop of any class of certified seed is to be harvested, and (2) when genetic purity and identity can best be determined. The field shall be in suitable condition to permit an adequate inspection to determine genetic purity and identity.

(d) A certification sample shall be drawn in a manner approved by the certifying agency from each cleaned lot of seed eligible for certification. Evidence that any lot of seed has not been protected from contamination which might affect genetic purity, or is not properly identified, shall be cause for possible rejection of certification.

[38 FR 25662, Sept. 14, 1973]

§ 201.73 Processors and processing of all classes of certified seed.

The following requirements must be met by processors of all classes of certified seed:

(a) Facilities shall be available to perform processing without introducing admixtures.

(b) Identity of the seed must be maintained at all times.

(c) Records of all operations relating to certification shall be complete and adequate to account for all incoming seed and final disposition of seed.

(d) Processors shall permit inspection by the certifying agency of all records pertaining to all classes of certified seed.

(e) Processors shall designate an individual who shall be responsible to the certifying agency for performing such duties as may be required by the certifying agency.

(f) Seed lots of the same variety and class may be blended and the class retained. If lots of different classes are blended, the lowest class shall be applied to the resultant blend. Such blending can only be done when authorized by the certifying agency.

[38 FR 25662, Sept. 14, 1973]

§ 201.74 Labeling of all classes of certified seed.

(a) All classes of certified seed when offered for sale shall have an official certification label affixed to each container clearly identifying the certifying agency, the lot number or other identification, the variety name (if certified as to variety) and the kind and class of seed.

(b) In the case of seed sold in bulk, the invoice or accompanying document shall identify the certifying agency, the crop kind, variety (if certified as to variety), class of seed, and the lot number or other identification.

(c) The official certification label may be printed directly on the container when an accounting of the containers is required by the certifying agency.

(d) Labels other than those printed on the containers shall be attached to containers in a manner that prevents removal and reattachment without tampering being obvious.

[38 FR 25662, Sept. 14, 1973, as amended at 46 FR 53639, Oct. 29, 1981]

§ 201.75 Interagency certification.

Interagency certification may be accomplished by participation of more than one official certifying agency in performing the services required to certify a lot of seed.

(a) The certifying agency issuing labels for all classes of certified seed shall require the seed on which the labels are used to meet standards at least equal to the minimum genetic standards for the seed in question as specified in Table 5 of this part.

(b) Seed to be recognized for interagency certification must be received in containers carrying official certification labels, or if shipped for processing, evidence of its eligibility from another official certifying agency, together with the following information:

(1) Variety (if certified as to variety) and kind;

(2) Quantity of seed (pounds or bushels);

(3) Class of certified seed;

(4) Inspection or lot number traceable to the previous certifying agency's records.

(c) Each label used in interagency certification shall be serially numbered or carry the certification identity number and clearly identify the certifying agencies involved, and the variety (if certified as to variety), kind and class of certified seed.

[38 FR 25662, Sept. 14, 1973; 38 FR 26800, Sept. 26, 1973]

§ 201.76 Minimum Land, Isolation, Field, and Seed Standards.

In the following Table 5 the figures in the ''Land'' column indicate the number of years that must elapse between the destruction of a stand of a kind and establishment of a stand of a specified class of a variety of the same kind. A certification agency may grant a variance in the land cropping history in specific circumstances where cultural practices have been proven adequate to maintain genetic purity. The figures in ''Isolation'' column indicate the distance in feet from any contamination source. The figures in the ''Field'' column indicate the minimum number of plants or heads in which one plant or head of another variety is permitted. The figure in the ''Seed'' column indicate the maximum percentage of seed of other varieties of off-types permitted in the cleaned seed.

TABLE 5

Crop	Foundation				Registered				Certified			
	Land	Isolation	Field	Seed	Land	Isolation	Field	Seed	Land	Isolation	Field	Seed
Alfalfa:												
Non hybrid	[1] 4	[44, 48] 600 ([59] 182.88m)	1,000	0.1	[1] 3	[3, 44, 48] 300 ([59] 91.44m)	400	0.25	[1, 2] 1	[44, 49] 165 ([59] 50.29m)	100	1.0
Hybrid	[1] 4	[43] 1,320 ([59] 402.34m)	[42] 1,000	0.1	.....	.....	.....	.....	[1, 2] 1	[3, 43, 44] 165 ([59] 50.29m)	[42] 100	1.0
Barley:												
Non hybrid	[7] 1	[23] 0	3,000	0.05	[7] 1	[23] 0	2,000	0.1	[7] 1	[23] 0	1,000	0.2
Hybrid	[30] 1	[21, 32] 660 ([59] 201.17m)	3,000	0.05	[30] 1	[21, 32] 660 ([59] 201.17m)	2,000	0.1	[30] 1	[21, 32] 330 ([59] 100.59m)	1,000	[55] 0.2
Hybrid (Chemically assisted)	.....	.....	.....	.....	.....	.....	.....	.....	[57] 0	[52, 53] 330 ([59] 100.59m)	[54] 1,000	0.2
Bean:												
Field and garden	[7] 1	[23] 0	2,000	0.05	[7] 1	[23] 0	1,000	0.1	[7] 1	[23] 0	400	0.2
Mung	[7] 1	[23] 0	1,000	0.1	[7] 1	[23] 0	500	0.2	[7] 1	[23] 0	200	0.5
Broad bean	[7] 1	[23] 0	2,000	0.05	[7] 1	[23] 0	1,000	0.1	[7] 1	[23] 0	500	0.2
Buckwheat	[7] 1	660 ([59] 201.17m)	3,000	0.05	[7] 1	660 ([59] 201.17m)	2,000	0.1	[7] 1	660 ([59] 201.17m)	1,000	0.2
Clover all kinds	[1, 9] 5	[5, 18, 44] 600 ([59] 182.88m)	1,000	0.1	[1, 9] 3	[5, 18, 44] 300 ([59] 91.44m)	400	0.25	[1, 9] 2	[18, 44] 165 ([59] 50.29)	100	1.0
Corn:												
Back cross	0	[10, 11] 660 ([59] 201.17m)	[13, 46] 1,000	[15] 0.1	.....	.....	.....	.....	.....	.....	.....	.....
Inbred	0	[10, 11] 660 ([59] 201.17m)	[13, 46] 1,000	[15] 0.1	.....	.....	.....	.....	.....	.....	.....	.....
Foundation single cross	0	[10, 11] 660 ([59] 201.17m)	[13, 46] 1,000	[15] 0.1	.....	.....	.....	.....	.....	.....	.....	.....
Hybrid	.....	.....	.....	.....	.....	.....	.....	.....	0	[11, 12] 660 ([59] 201.17m)	1,000	0.5
Open-pollinated	.....	.....	.....	.....	.....	.....	.....	.....	0	[11, 12] 660 ([59] 201.17m)	200	0.5
Sweet	.....	.....	.....	.....	.....	.....	.....	.....	0	[11, 14] 600 ([59] 201.17m)	.....	0.5
Cotton	0	[19] 0	10,000	0.03	0	[19] 0	5,000	0.05	0	[19] 0	1,000	0.1
Cowpea	[7] 1	[23] 0	2,000	0.1	[7] 1	[23] 0	1,000	0.2	[7] 1	[23] 0	500	0.5
Crambe	[7] 1	660 ([59] 201.17m)	2,000	0.05	[7] 1	[24] 660 ([59] 201.17m)	1,000	0.1	[7] 1	[24] 660 ([59] 201.17m)	500	0.25
Crownvetch	[1] 5	[5, 44] 600 ([59] 182.88m)	1,000	0.1	[1] 3	[5, 44] 300 ([59] 91.44m)	400	0.25	[1] 2	[6, 44] 165 ([59] 50.29)	100	1.0
Flatpea	[1] 4	[5, 44] 600 ([59] 182.88m)	1,000	0.1	[1] 3	[3, 5, 44] 300 ([59] 91.44m)	400	0.25	[1, 2] 1	[3, 44] 165 ([59] 50.29m)	100	1.0
Flax	[7] 1	[23] 0	5,000	0.05	[7] 1	[23] 0	2,000	0.1	[7] 1	[23] 0	1,000	0.2

TABLE 5—Continued

Crop	Foundation				Registered				Certified			
	Land	Isolation	Field	Seed	Land	Isolation	Field	Seed	Land	Isolation	Field	Seed
Grasses:												
Cross-pollinated	[57] 5	[4, 18, 20] 900 ([59] 274.32m)	1,000	0.1	[8, 57] 1	[4, 18, 20] 300 ([59] 91.44m)	100	1.0	[8, 57] 1	[4, 18, 20, 58] 165 ([59] 50.29)	50	[47, 50] 2.0
Strains at least 80 percent apomictic and highly self-fertile species	[57] 5	[4, 18, 20] 60 ([59] 18.29m)	1,000	0.1	[8, 57] 1	[4, 18, 20] 30 ([59] 9.14m)	100	1.0	[9, 57] 1	[4, 18, 20, 58] 15 ([59] 4.57m)	50	[16] 2.0
Lespedeza	[1] 5	[4] 10 ([59] 3.05m)	1,000	0.1	[1] 3	[4] 10 ([59] 3.05m)	400	0.25	[1] 2	[4] 10 ([59] 3.05m)	100	1.0
Millet:												
Cross-pollinated	[8] 1	[40] 1,320 ([59] 402.34m)	[27] 20,000	0.005	[8] 1	[40] 1,320 ([59] 402.34m)	[27] 10,000	0.01	[8] 1	[40] 660 ([59] 201.17m)	[27] 5,000	0.02
Self-pollinated	[8] 1	[23] 0	3,000	0.05	[8] 1	[23] 0	2,000	0.1	[8] 1	[23] 0	1,000	0.2
Mustard	4	1,320 ([59] 402.34m)	2,000	0.05	.....	.....	.....	.....	2	[24] 660 ([59] 201.17m)	500	0.25
Oat	[7] 1	[23] 0	3,000	0.2	[7] 1	[23] 0	2,000	0.3	[7] 1	[23] 0	1,000	0.5
Okra	[7] 1	1,320 ([59] 402.34m)	[27] 0	0.0	[7] 1	1,320 ([59] 402.34m)	[27] 2,500	0.5	[7] 1	825 ([59] 251.46m)	[27] 1,250	1.0
Onion	[7] 1	5,280 ([59] 1,609.36m)	[22] 200	0.0	[7] 1	2,640 ([59] 804.66m)	[22] 200	[22] 0.5	[7] 1	1,320 ([59] 402.34m)	[22] 200	[22] 1.0
Pea, field	[7] 1	[23] 0	2,000	0.05	[7] 1	[23] 0	1,000	0.1	[7] 1	[23] 0	500	0.2
Peanut	[7] 1	[23] 0	1,000	0.1	[7] 1	[23] 0	500	0.2	[7] 1	[23] 0	200	0.5
Pepper	[7] 1	[25] 200 ([59] 60.96m)	0	0.0	[7] 1	[25] 100 ([59] 30.48m)	300	0.5	[7] 1	[25] 30 ([59] 9.14m)	150	1.0
Rape:												
Cross-pollinated	4	[24] 1,320 ([59] 402.34m)	2,000	0.05	.....	.....	.....	.....	2	[24] 330 ([59] 100.59m)	500	0.25
Self-pollinated	4	[24] 660 ([59] 201.17m)	2,000	0.05	.....	.....	.....	.....	2	[24] 330 ([59] 100.59m)	500	0.25
Rice	[7] 1	[39] 10 ([59] 3.05m)	10,000	0.05	[7] 1	[39] 10 ([59] 3.05m)	5,000	0.1	[7] 1	[39] 10 ([59] 3.05)	1,000	0.2
Rye	[7] 1	[18] 660 ([59] 201.17m)	3,000	0.05	[7] 1	[18] 660 ([59] 201.17m)	2,000	0.1	[7] 1	[18] 660 ([59] 201.17m)	1,000	0.2
Safflower	[7] 2	1,320 ([59] 402.34m)	10,000	0.01	[7] 2	1,320 ([59] 402.34m)	2,000	0.05	[7] 2	1,320 ([59] 402.34m)	1,000	0.1
Sainfoin	[1] 5	[5, 44] 600 ([59] 182.88m)	1,000	0.1	[1] 3	[5, 44] 300 ([59] 91.44m)	400	0.25	[1] 2	[6, 44] 165 ([59] 50.29m)	100	1.0
Sorghum:												
Nonhybrid	[7] 1	900 ([59] 301.76m)	[27] 50,000	0.005	[7] 1	990 ([59] 301.76m)	[27] 35,000	0.01	[7] 1	[29] 660 ([59] 201.17m)	[27] 20,000	0.05
Hybrid seedstock	[7] 1	990 ([59] 301.76m)	[27] 50,000	0.005	.....	.....	.....	.....	.....	.....	.....	.....

Commercial hybrid	.....	.....	.....	.....	.....	.....	.....	.....	[7] 1	[21, 29, 31] 660 ([59] 201.17m)	[27] 20,000	0.1
Soybean	[23] 1	[23] 0	1,000	0.1	[33] 1	[23] 0	500	0.2	[33] 1	[23] 0	200	0.5
Sunflower:												
Nonhybrid	1	[41, 45] 2,640 ([59] 804.66m)	200	0.02	1	[41, 45] 2,640 ([59] 804.66m)	200	0.02	1	[41, 45] 2,640 ([59] 804.66m)	200	[34] 0.1
Hybrid	1	[41, 45] 2,640 ([59] 804.66m)	[35] 250	[56] 0.02	.....	.....	.....	.....	1	[41, 45] 2,640 ([59] 804.66m)	[35] 250	[34, 56] 0.1
Tomato	[7] 1	[25] 200 ([59] 60.96m)	0	0	[7] 1	[25] 100 ([59] 30.48m)	300	0.5	[7] 1	[25] 30 ([59] 9.14m)	150	1.0
Tobacco:												
Nonhybrid	[36] 0	[37] 150 ([59] 45.72m)	0	0.01	[36] 0	[37] 150 ([59] 45.72m)	0	0.01	[36] 0	[37] 150 ([59] 45.72m)	0	0.01
Hybrid	.....	.....	.....	.....	.....	.....	.....	.....	[36] 0	[38] 150 ([59] 45.72m)	0	0.01
Trefoil, birdsfoot	[1] 5	[5, 44] 600 ([59] 182.88m)	1,000	0.1	[1] 3	[5, 44] 300 ([59] 91.44m)	400	0.25	[1] 2	[6, 44] 165 ([59] 50.29m)	100	1.0
Triticale	[7] 1	[23] 0	3,000	0.05	[7] 1	[23] 0	2,000	0.1	[7] 1	[23] 0	1,000	0.2
Vetch	[1, 7] 5	[17, 44] 10 ([59] 3.05m)	1,000	0.1	[1, 7] 3	[17, 44] 10 ([59] 3.05m)	400	0.25	[1, 7] 2	[17, 44] 10 ([59] 3.05m)	100	1.0
Vetch, milk	[1] 5	[5, 44] 600 ([59] 182.88m)	2,000	0.05	[1] 3	[5, 44] 300 ([59] 91.44m)	1,000	0.1	[1] 2	[44] 165 ([59] 50.29m)	200	0.5
Watermelon	[7] 1	[26] 2,640 ([59] 804.66m)	[28] 0	0	[7] 1	[26] 2,640 ([59] 402.34m)	[28] 0	0.5	[7] 1	[26] 1,320	[28] 500	1.0
Wheat:												
Nonhybrid	[7] 1	[23] 0	3,000	0.05	[7] 1	[23] 0	2,000	0.1	[7] 1	[23] 0	1,000	0.2
Hybrid	[30] 1	[21, 32] 660 ([59] 201.17m)	3,000	0.05	[30] 1	[21, 32] 660 ([59] 201.17m)	2,000	0.1	[30] 1	[21, 32] 330 ([59] 100.59m)	1,000	0.2
Hybrid (Chemically assisted)	.....	.....	.....	.....	.....	.....	.....	.....	[51] 0	[52, 53] 330 ([59] 100.58m)	[54] 1,000	[55] 0.2

[1] The land must be free of volunteer plants of the crop kind during the year immediately prior to establishment and no manure or other contaminating material shall be applied the year previous to seeding or during the establishment and productive life of the stand.

[2] At least 2 years must elapse between destruction of indistinguishable varieties or varieties of dissimilar adaptation and establishment of the stand for the production of the Certified class of seed.

[3] Isolation distance for certified seed production shall be at least 500 feet (152.07m) from varieties of dissimilar adaptation.

[4] Isolation between classes of the same variety may be reduced to 25 percent of the distance otherwise required.

[5] This distance applies when fields are 5 acres (2ha) or larger in area. For smaller fields, the distances are 900 feet (274.32m) and 450 feet (137.16m) for the Foundation and Registered classes, respectively.

[6] Fields of less than 5 acres (2ha) require 330 feet (100.59m).

[7] Requirement is waived if the previous crop was grown from certified seed of the same variety.

[8] Requirement is waived if the previous crop was of the same variety and of a certified class equal or superior to that of the crop seeded.

[9] Reseeding varieties of crimson clover may be allowed to volunteer back year after year on the same ground. If a new variety is being planted where another variety once grew, the field history requirements apply.

[10] No isolation is required for the production of hand-pollinated seed.

[11] When the contaminant is the same color and texture, the isolation distance may be modified by (1) adequate natural barriers or (2) differential maturity dates, provided there are no receptive silks in the seed parent at the time the contaminant is shedding pollen. In addition, dent sterile popcorn requires no isolation from dent corn.

[12] Where the contaminating source is corn of the same color and texture as that of the field inspected or white endosperm-corn optically sorted, the isolation distance is 410 feet (124.97m) and may be modified by the planting of pollen parent border rows according to the following table:

Minimum distance from contaminant	Minimum Numbers of Border Rows Required	
	Field size, up to 20 acres (8ha)	Field size, 20 acres (8ha) or more
410 (124.97m)	0	0
370 (112.78m)	2 (0.8ha)	1 (0.4ha)
330 (100.59m)	4 (1.6ha)	2 (0.8ha)
290 (88.39m)	6 (2.4ha)	3 (1.2ha)
245 (74.68m)	8 (3.2ha)	4 (1.6ha)
205 (62.48m)	10 (4.0ha)	5 (2.0ha)
165 (50.29m)	12 (4.8ha)	6 (2.4ha)
125 (38.10m)	14 (5.6ha)	7 (2.8ha)
85 (25.91m)	16 (6.4ha)	8 (3.2ha)
0	Not permitted	10 (4.0ha)

[13] Refers to off-type plants in the pollen parent that have shed pollen or to the off-type plants in the see parent at the time of the last inspection.
[14] The required minimum isolation distance for sweet corn is 660 feet (201.17m) from the contaminating source, plus four border rows when the field to be inspected is 10 acres (4.0ha) or less in size. This distance may be decreased by 15 feet (4.57m) for each increment of 4 acres (1.6ha) in the size of the field to a maximum of 40 acres (16ha) and further decreased 40 feet (12.19m) for each additional border row to a maximum of 16 rows. These border rows are for pollen-shedding purposes only.
[15] Refers to off-type ears. Ears with off-colored or different textured kernels are limited to 0.5 percent, or a total of 25 off-colored or different textured kernels per 1,000 ears.
[16] The Merion variety of Kentucky bluegrass is allowed 3 percent.
[17] All cross-pollinating varieties must be 400 feet (121.92m) from any contaminating source.
[18] Isolation between diploids and tetraploids shall be at least 15 feet (4.57m).
[19] Minimum isolation shall be at least 100 feet (30.48m) if the cotton plants in the contaminating source differ by easily observable morphological characteristics from the field to be inspected. Isolation distance between upland and Egyptian types shall be at least 1,320 feet (402.34m), 1,320 feet (402.34m), and 660 feet (182.88m) for Foundation, Registered, and Certified classes, respectively.
[20] These distances apply when there is no border removal. Border removal applies only to fields of 5 acres (2ha) or more. Removal of a 9-foot (2.7m) border (after flowering) decreases the required distance for Foundation, Registered, and Certified seed classes to 600 feet (182.88m), 225 feet (68.58m), and 100 feet (30.48m), respectively, for cross-pollinated species, and to 30 feet (9.14m), 15 feet (4.57m), and 15 feet (4.57m), respectively, for apomictic and self-pollinated species. Removal of a 15 foot (4.57m) border (after flowering) allows a further decrease to 450 feet (136.16m), 150 feet (45.72m), and 75 feet (22.86m), respectively, for cross-pollinated species.
[21] Isolation distances between 2 fields of the same kind may be reduced to a distance adequate to prevent mechanical mixture, if the sum of percentages of plants in bloom in both fields does not exceed 5 percent at a time when more than 1 percent of the plants in either field are in bloom.
[22] Refers to bulbs.
[23] Distance adequate to prevent mechanical mixture is necessary.
[24] Required isolation between classes of the same variety is 10 feet (3.05m).
[25] The minimum distance may be reduced by 50 percent if different classes of the same variety are involved.
[26] The minimum distance may be reduced by 50 percent if the field is adequately protected by natural or artificial barriers.
[27] These ratios are for definite other varieties. The ratios for doubtful other varieties are:

	Foundation	Registered	Certified
Millet	1:10,000	1:5,000	1:2,500
Sorghum:			
Nonhybrid	1:20,000	1:10,000	1:1,000
Hybrid	1:20,000	NA	1:1,000
Okra	None	1:750	1:500

[28] Whiteheart fruits may not exceed 1 per 100, 40, and 20 for Foundation, Registered, and Certified classes, respectively. Citron or hard rind is not permitted in Foundation or Registered classes and may not exceed 1 per 1,000 fruits in the Certified class.
[29] This distance applies if the contaminating source does not genetically differ in height from the pollinator parent or has a different chromosome number. If the contaminating source does (genetically) differ and has the same chromosome number the distance shall be 990 feet (301.76m). The minimum isolation from grass sorghum or broomcorn with the same chromosome number shall be 1,320 feet (402.34m).
[30] Requirement is waived for the production of pollinator lines if the previous crop was grown from a certified class of seed of the same variety. Sterile lines and crossing blocks must be on land free of contaminating plants.

[31] If the contaminating source is similar to the hybrid in all important characteristics, the isolation may be reduced by 66 feet (20.12m) for each pair of border rows of the pollinator parent down to a minimum of 330 feet (100.59m). These rows must be located directly opposite or diagonally to the contaminating source. The pollinator border rows must be shedding pollen during the entire time 5 percent or more of the seed parent flowers are receptive.

[32] An unplanted strip at least 2 feet (0.61m) in width shall separate male sterile plants and pollinator plants in inter-planted blocks.

[33] Unless the preceding crop was another kind or unless the preceding soybean crop was planted with a class of certified seed of the same variety, or unless the preceding soybean crop and the variety being planted have an identifiable character difference, in which case, no time need elapse.

[34] May include not more than 0.04 percent purple or white seeds.

[35] Standards apply equally to seed parents and pollen parents which may include up to 1:1,000 plants each of the wild-type branching, purple, or white-seeded plants.

[36] A new plant bed must be used each year unless the bed is properly treated with a soil sterilant prior to seeding.

[37] This distance is applied between varieties of the same type and may be waived if four border rows of each variety are allowed to bloom and set seed between the two varieties but are not harvested for seed. Isolation between varieties of different types shall be 1,320 feet (402.34m) except if protected by bagging or by topping all plants in the contaminating source before bloom.

[38] When male sterile and male fertile plants of the same type are planted adjacent in a field, this requirement may be waived; provided, four border rows of male sterile plants are allowed to bloom and set seeds. The seed from these border rows shall not be harvested as part of the certified lot of seed produced by the male sterile plants. When plants are of different types, the distance shall be 1,320 feet (402.34m) except if protected by bagging or by topping all plants in the contaminating source before bloom.

[39] Isolation between varieties or non-certified fields of the same variety shall be 100 feet (30.48m) if aerial seeded and 50 feet (15.24m) if ground broadcast, and 10 feet (3.05m) is ground drilled.

[40] Isolation between millets of different genera shall be 6 feet (1.83m).

[41] Does not apply to *Helianthus similes, H. ludens,* or *H. agrestis.*

[42] The ratio of male sterile (A) strains and pollen (B or C) strains shall not exceed 2:1.

[43] Parent lines (A and B) in a crossing block, or seed and pollen lines in a hybrid seed production field, shall be separated by at least 6 feet (1.83m) and shall be managed and harvested in a manner to prevent mixing.

[44] Distance between fields of certified classes of the same variety may be reduced to 10 feet (3.05m) regardless of the class or size of the fields.

[45] An isolation distance of 5,280 feet (1609.36m) is required between oil and non-oil sunflower types and between either type and other volunteers or wild types.

[46] Detasseling, cutting, or pulling of the cytoplasmic male-sterile seed parent is permitted.

[47] All varieties of perennial ryegrass seed are allowed 3.0 percent.

[48] This distance applies for fields over 5 acres (2ha). For alfalfa fields of 5 acres (2ha) or less that produce the Foundation and Registered seed classes, the minimum distance from a different variety or a field of the same variety that does not meet the varietal purity requirements for certification shall be 900 feet (274.32m) and 450 feet (137.16m), respectively.

[49] There must be at least 10 feet (3.05m) or a distance adequate to prevent mechanical mixture between a field of another variety (or non-certified area within the same field) and the area being certified. The 165 feet (50.29m) isolation requirement is waived if the area of the ''isolation zone'' is less than 10 percent of the field eligible for the Certified class. The ''isolation zone'' is that area calculated by multiplying the length of the common border(s) with other varieties of alfalfa by the average width of the field (being certified) falling within the 165 feet (50.29m) isolation. Areas within the isolation zone nearest the contamination source shall not be certified.

[50] Seed of Critana thickspike wheatgrass may contain up to 30 percent slender wheatgrass types.

[51] Crossing blocks must be planted on land free of volunteer contaminating plants.

[52] This distance applies to the seed parent when the contaminating source is wheat of another market class. If the contaminating source is the same market class as the seed parent, the distance may be modified by the planting of pollen parent border according to the following table:

Minimum distance from contaminant		Pollen (parent border)	
Feet	Meters	Feet	Meters
330	100.59	0	0
275	83.82	15	4.57
215	65.53	25	7.62
160	48.77	35	10.67
100	30.48	50	15.24

[53] Interplanted blocks of seed parent and pollinator shall be separated by an unplanted strip a minimum of one foot (0.31m) in width and be clearly identifiable.

[54] If Foundation or Registered the ratio shall be 1:3000 (Foundation) and 1:2000 (Registered).

[55] Does not include seed of the female parent.

[56] Pre-Control Test Standards: If field inspection shows one or more of the following, the applicant may request that seed certification be based on the results of a pre-certification grow-out test approved by the certification agency: a. inadequate isolation; b. too few male parent plants shedding pollen when female plants are receptive; c. excess off-types not to include wild types. In such cases, at least 2,000 plants must be observed and meet the following standards before seed can be certified from fields with problems listed above:

[For non-oil types, seed which contains not more than 15 percent sterile plants may be certified. If it contains 85 percent-95 percent hybrid plants, the percentage of hybrid shall be shown on the certification label]

Factor	Maximum Permitted	
	Hybrid (percent)	Inbred (percent)
Sterile Plants	5.0	
Sterile or Fertile Plants		5.0
Morphological Variants	0.5	0.5
Wild Types	0.2	0.2
Total (including above types)	5.0	5.0

[57] Application to establish the pedigree must be made within one year of seeding. The crop will remain under supervision of the certifying agency as long as the field is eligible for certification.

[58] These distances apply when there is no border removal. Varieties that are 95 percent or more apomictic, as defined by the originating breeder, shall have the isolation distance reduced to a mechanical separation only. Varieties less than 95 percent apomictic and all other cross pollinating species that have an "isolation zone" of less than 10 percent of the entire field, no isolation is required. (Isolation zone is calculated by multiplying the length of the common border with other varieties of grass by the average width of the certified field falling within the isolation distance required.)

[59] Indicates metric equivalent in meters.

[59 FR 64516, Dec. 14, 1994]

ADDITIONAL REQUIREMENTS FOR THE CERTIFICATION OF PLANT MATERIALS OF CERTAIN CROPS

§ 201.77 Length of stand requirements.

(a) *Alfalfa.* Limitations on the age of stand and certified seed classes through which a given variety may be multiplied both inside and outside its region of adaptation shall be specified by the originator or his designee. Certified seed production outside the region of adaptation shall not exceed 6 years if not otherwise specified by the originator, or his designee.

(b) *Red clover.* Only two seed crops are permitted of all certified seed classes.

(c) *White and alsike clover.* Only two successive seed crops are permitted following the year of establishment for Foundation and Registered classes, but 2 additional years are permitted if the field is reclassified to the next lower class. Four successive seed crops following seeding are permitted if the first and succeeding crops are of the Certified class, provided the stand of perennial plants is maintained.

(d) *Sainfoin.* All certified seed classes are eligible to produce five successive seed crops following seeding.

[38 FR 25664, Sept. 14, 1973]

§ 201.78 Pollen control for hybrids.

(a) *Wheat and barley.* Shedders in the seed parent, at any one inspection, are limited to 1:200 heads for Foundation A Line and 1:100 heads for Registered A Line, except that when the A Line is increased outside the area of the anticipated A x R production in order to utilize self-fertility produced by environmental effects, only isolation and genetic purity standards will be in effect. (An A Line is a cytoplasmic male sterile female line used to produce hybrid seed. An R Line is a pollinator line used to pollinate an A Line and to restore fertility in the resulting hybrid seed.)

(b) *Corn.* When 5 percent or more of the seed parent plants have receptive silks, shedding tassels in the seed parent plants shall be limited to 1 percent at any one inspection, or a total of 2 percent at any three inspections on different dates. Shedding tassels are those which have 2 inches or more of the central stem or branches, or any combination thereof, shedding pollen.

(c) *Sorghum.* Shedders in the seed parent, at any one inspection, are limited to 1:3,000 plants for Foundation class and 1:1,500 plants for Certified class.

(d) *Sunflowers.* Seed parents flowering and shedding pollen before the male parents are shedding pollen must be removed. At least 50 percent of the male plants must be producing pollen when the seed parent is in full bloom.

(e) *Hybrid alfalfa.* When at least 75 percent of the plants are in bloom and there is no more than 15 percent seed set, 200 plants shall be examined to determine the pollen production index (PPI). Each plant is rated as 1, 2, 3 or 4 with ''1'' representing no pollen, ''2'' representing a trace of pollen, ''3'' representing substantially less than normal pollen, and ''4'' representing normal pollen. The rating is weighted as 0, 0.1, 0.6 or 1.0, respectively. The total number of plants of each rating is multiplied by the weighted rating and the values are totaled. The total is divided by the number of plants rated and multiplied by 100 to determine the PPI. The maximum PPI allowed is 14 for the Foundation class, and 6 for 95 percent hybrid seed, and 42 for 75 percent hybrid seed of the Certified class.

[38 FR 25664, Sept. 14, 1973, as amended at 41 FR 20158, May 17, 1976]

IMPORTED SEED

§ 201.101 Exemptions.

For the purpose of section 302(c)(2) the act, seeds of the following kinds are found to be imported in a substantial proportion for other than seeding purposes and are exempted from the import provisions (Title III) of the act when imported for other than seeding purposes: *Provided,* That they are accompanied by declarations when and as required under § 201.222:

Barley.
Bean, Adzuki.
Bean, field.
Bean, horse or broad.
Bean, lima.
Bean, Mung.
Buckwheat, common.
Canary grass.
Castorbean.

Celery.
Chickpea.
Corn, field.
Cowpea.
Crambe.
Flax.
Guar.
Hemp.
Lentil.
Lettuce.
Lupine.
Millet, foxtail, German, Hungarian, or golden.
Millet, proso.
Mustard.
Mustard, black.
Mustard, white.
Oat.
Parsley.
Pea.
Pea, field.
Peanut.
Pepper.
Pumpkin.
Rape, annual.
Rape, bird.
Rape, turnip.
Rape, winter.
Rice.
Rye.
Safflower.
Sesame.
Sorghum.
Soybean.
Sunflower.
Triticale.
Velvetbean.
Vetch.
Watermelon.
Wheat.

[5 FR 35, Jan. 4, 1940]

EDITORIAL NOTE: For Federal Register citations affecting §201.101, see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 201.102 Pure live seed.

(a) For the purposes of section 304(c) of the Act, the following percentages for the kinds stated will be construed to meet the import requirements of the act as to pure live seed:

	Percent
Alfileria	50
Artichoke	65
Bahia grass	50
Bluegrass, Poa spp	65
Bluestem, big	25
Bluestem, little	25
Bluestem, sand	25
Bluestem, yellow	25
Beets	70
Buffalo grass (burs)	35
Buffelgrass	50
Burdock, great	60
Cardoon	65
Carrots	55
Celeriac	60
Celery	60
Chicory	70
Chives	50
Cress, water	50
Dallis grass	35
Dandelion	65
Dropseed, sand	65
Eggplant	65
Grama, blue	35
Grama, side oats	10
Guinea grass	10
Indian grass, yellow	50
Japanese lawn grass	35
Johnsongrass	65
Leek	65
Lovegrass, sand	50
Manila grass	35
Molasses grass	25
Okra	60
Panic grass, blue	50
Panic grass, green	10
Parsley	65
Parsnip	65
Pepper	65
Rhodes grass	35
Rhubarb	65
Sorghum almum	65
Sorrel	65
Spinach, New Zealand	50
Switch grass	35
Tomato, husk	60
Vasey grass	35
Veldtgrass	25
Wheatgrass, western	65
Wild rye, Canada	50
Wild-rye, Russian	60

(b) As provided in section 302(a) of the Act, a certain number of samples of seed representing seed lots offered for importation will not be tested to determine whether the purelive seed requirement is being met, in which case, the importer shall be so advised by the Seed Branch, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture.

[15 FR 2400, Apr. 28, 1950, as amended at 20 FR 7940, Oct. 21, 1955; 25 FR 8774, Sept. 13, 1960; 26 FR 10036, Oct. 26, 1961; 30 FR 7892, June 18, 1965; 32 FR 12782, Sept. 6, 1967]

§ 201.103 Unadapted alfalfa and red clover.

Alfalfa seed and red clover seed of foreign origin other than the Dominion of Canada have been determined to be unadapted for general agricultural use in the United States.

[6 FR 3960, Aug. 8, 1941]

§ 201.104 Weed seeds.

(a) When occurring in importations subject to the Act, seeds or bulbets of all plants belonging to the following plant families, except those listed as agricultural or vegetable seeds, or recognized as seeds of ornamentals, are detrimental to the agricultural interests of the United States, or a part thereof, and therefore are considered weed seeds.

PLANT FAMILIES

Aizoaceae—Carpetweed.
Amaranthaceae—Amaranth or pigweed.
Anacardiaceae—Sumac.
Apocynaceae—Dogbane.
Asclepiadaceae—Milkweed.
Boraginaceae—Borage.
Campanulaceae—Bluebell.
Capparidaceae—Caper.
Caryophyllaceae—Pink.
Chenopodiaceae—Goosefoot.
Commelinaceae—Spiderwort.
Compositae—Composite or daisy.
Convolvulaceae—Morning-glory.
Crassulaceae—Orpine.
Cruciferae—Mustard.
Cucurbitaceae—Cucurbit.
Cyperaceae—Sedge.
Dipsacaceae—Teasel.
Euphorbiaceae—Spurge.
Geraniaceae—Geranium.
Gramineae—Grass.
Hydrophyllaceae—Waterleaf.
Hypericaceae—St. Johnswort.
Illecebraceae—Knotweed.
Iridaceae—Iris.
Juncaceae—Rush.
Labiatae—Mint.
Leguminosae—Legume.
Liliaceae—Lily.
Lobeliaceae—Lobelia.
Lythraceae—Loosestrife.
Malvaceae—Mallow.
Nyctaginaceae—Four-o'clock.
Onagraceae—Evening-primrose.
Oxalidaceae—Wood sorrel.
Papaveraceae—Poppy.
Phytolaccaceae—Pokeweed.
Piperaceae—Pepper.
Plantaginaceae—Plantain.
Polemoniaceae—Phlox.
Polygonaceae—Buckwheat or smartweed.
Portulacaceae—Purslane.
Primulaceae—Primrose.
Ranunculaceae—Buttercup.
Resedaceae—Mignonette.
Rosaceae—Rose.
Rubiaceae—Madder.
Scrophulariaceae—Figwort.
Solanaceae—Nightshade.
Umbelliferae—Parsley.
Urticaceae—Nettle.
Valerianceae—Cornsalad.
Verbenaceae—Verbena.
Zygophyllaceae—Caltrop.

(b) When occurring in an importation of other agricultural or vegetable seeds, the following agricultural and vegetable seeds are detrimental to the agricultural interests of the United States, or a part thereof, and therefore are considered weed seeds, unless they are declared in the entry papers for importation as agricultural or vegetable seeds:

Alfileria—Erodium cicutarium (L.) L'Her.
Beggarweed—Desmodium tortuosum (Sev.) D.C.
Bermudagrass, giant—Cynodon dactylon var. aridus. Harlan et de Wit.
Brome, field—Bromus arvensis L.
Burdock, great—Arctium lappa.
Burnet, little—Sanguisorba minor Scop.
Chess, soft—Bromus mollis L.
Chicory—Chicorium intybus L.
Cress, upland—Barbarea verna (Mill.) Aschers.
Crownvetch—Coronilla varia L.
Dandelion—Taraxacum officinale Weber.
Dichondra—Dichondra repens Forst.
Grass, Bermuda—Cynodon dactylon (L.) Pers.
Grass, velvet—Holcus lanatus L.
Mustard, India—Brassica juncea (L.) Goss.
Mustard, black—Brassica nigra Koch.
Rape, annual—Brassica napus var. annus Koch.
Rape, bird—Brassica campestris L.
Rape, turnip—Brassica campestris vars. L.
Sesbania—Sesbania exaltata (Raf.) Torr.
Sorghum almum—Sorghum almum Parodi.
Sorrel—Rumex acetosa L.
Sweet vernalgrass—Anthoxanthum odoratum L.

[5 FR 35, Jan. 4, 1940]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 201.104 see the List of CFR Sections Affected in the Finding Aids section of this volume.

§ 201.105 Noxious weed seeds.

(a) Seeds of the following plants shall be considered noxious weed seeds:

[1] *Acroptilon repens* (L.) DC. (=*Centaurea repens* L.) (=*Centaurea picris*)
Aeginetia spp.
Ageratina adenophora (Sprengel) King & Robinson
Alectra spp.
Alternanthera sessilis (L.) R. Brown ex de Candolle
Asphodelus fistulosus L.
Avena sterilis L. (including *Avena ludoviciana* Durieu)

Azolla pinnata R. Brown
Borreria alata (Aublet) de Candolle
[1] *Cardaria draba* (L.) Desv.
[1] *Cardaria pubescens* (C. A. Mey.) Jarmol.
Carthamus oxycantha M. Bieberstein
Chrysopogon aciculatus (Retzius) Trinius
[1] *Cirsium arvense* (L.) Scop.
Commelina benghalensis L.
[1] *Convolvulus arvensis* L.
Crupina vulgaris Cassini
Cuscuta spp.
Digitaria abyssinica (=*D. scalarum*)
Digitaria velutina (Forsskal) Palisot de Beauvois
Drymaria arenarioides Humboldt & Bonpland ex Roemer & Schultes
Eichhornia azurea (Swartz) Kunth
[1] *Elytrigia repens* (L.) Desv. (=*Agropyron repens* (L.) Beauv.)
Emex australis Steinheil
Emex spinosa (L.) Campdera
[1] *Euphorbia esula* L.
Galega officinalis L.
Heracleum mantegazzianum Sommier & Levier
Hydrilla verticillata (Linnaeus f.) Royle
Hygrophila polysperma T. Anderson
Imperata brasiliensis Trinius
Imperata cylindrica (L.) Raeuschel
Ipomoea aquatica Forsskal
Ipomoea triloba L.
Ischaemum rugosum Salisbury
Lagarosiphon major (Ridley) Moss
Leptochloa chinensis (L.) Nees
Limnophila sessiliflora (Vahl) Blume
Lycium ferocissimum Miers
Melaleuca quinquenervia (Cav.) Blake
Melastoma malabathricum L.
Mikania cordata (Burman f.) B. L. Robinson
Mikania micrantha Humboldt, Bonpland & Kunth
Mimosa invisa Martius
Mimosa pigra L. var. *pigra*
Monochoria hastata (L.) Solms-Laubach
Monochoria vaginalis (Burman f.) C. Presl
Nassella trichotoma (Nees) Hackel ex Arechavaleta
Opuntia aurantiaca Lindley
Orobanche spp.
Oryza longistaminata A. Chevalier & Roehrich
Oryza punctata Kotschy ex Steudel
Oryza rufipogon Griffith
Ottelia alismoides (L.) Pers.
Paspalum scrobiculatum L.
Pennisetum clandestinum Hochstetter ex Chiovenda
Pennisetum macrourum Trinius
Pennisetum pedicellatum Trinius
Pennisetum polystachion (L.) Schultes
Prosopis alapataco R. A. Philippi
Prosopis argentina Burkart
Prosopis articulata S. Watson
Prosopis burkartii Munoz
Prosopis caldenia Burkart
Prosopis calingastana Burkart
Prosopis campestris Grisebach
Prosopis castellanosii Burkart
Prosopis denudans Bentham
Prosopis elata (Burkart) Burkart
Prosopis farcta (Solander ex Russell) Macbride
Prosopis ferox Grisebach
Prosopis fiebrigii Harms
Prosopis hassleri Harms
Prosopis humilis Gillies ex Hooker & Arnott
Prosopis kuntzei Harms
Prosopis pallida (Humboldt & Bonpland ex Willdenow) Humboldt, Bonpland & Kunth
Prosopis palmeri S. Watson
Prosopis reptans Bentham var. *reptans*
Prosopis rojasiana Burkart
Prosopis ruizlealii Burkart
Prosopis ruscifolia Grisebach
Prosopis sericantha Gillies ex Hooker & Arnott
Prosopis strombulifera (Lamarck) Bentham
Prosopis torquata (Cavanilles ex Lagasca y Segura) de Candolle
Rottboellia cochinchinensis (Lour.) Clayon (=*R. exaltata* (L.) L. f.)
Rubus fruticosus L. (complex)
Rubus moluccanus L.
Saccharum spontaneum L.
Sagittaria sagittifolia L.
Salsola vermiculata L.
Salvinia auriculata Aublet
Salvinia biloba Raddi
Salvinia herzogii de la Sota
Salvinia molesta D.S. Mitchell
Setaria pallide-fusca (Schumacher) Stapf & Hubbard
Solanum torvum Swartz
Solanum viarum Dunal
[1] *Sonchus arvensis* L.
[1] *Sorghum halepense* (L.) Pers.
Sparganium erectum L.
Striga spp.
Tridax procumbens L.
Urochloa panicoides Beauvois

[1] Seeds with tolerances applicable to their introduction.

(b) The tolerance applicable to the prohibition of the noxious weed seeds in paragraph (a) of this section marked with ([1]) shall be two seeds in the minimum amount required to be examined as shown in Table 1, §201.46. If fewer than two seeds are found in an initial examination, the shipment from which the sample was drawn may be imported. If two seeds are found in an initial examination, a second sample must be examined. If two or fewer seeds are found in the second examination, the shipment from which the samples were drawn may be imported. If three or more seeds are found in the second examination, the shipment from which the samples were drawn may not be imported. If three or more seeds are found in an initial examination, the

shipment from which the sample was drawn may not be imported.

[60 FR 35830, July 12, 1995]

§ 201.106 Mixtures not considered adulterations.

For the purposes of section 303 of the act the importation of mixtures in any combination of seed of suckling clover (Trifolium dubium), white clover (Trifolium repens), or cluster clover (Trifolium glomeratum) shall not be construed to be adulterated.

[6 FR 3960, Aug. 8, 1941. Redesignated at 60 FR 16979, Apr. 4, 1995]

JOINT RULES AND REGULATIONS OF THE SECRETARY OF THE TREASURY AND THE SECRETARY OF AGRICULTURE

DEFINITIONS

§ 201.201 Agricultural seeds.

The term *agricultural seeds* means those seeds so defined in § 201.2.

[5 FR 39, Jan. 4, 1940]

§ 201.202 Vegetable seeds.

The term *vegetable seeds* means those seeds so defined in § 201.2.

[5 FR 39, Jan. 4, 1940]

§ 201.203 Screenings.

The term *screenings* means chaff, sterile florets, immature seed, weed seed, inert matter, and any other materials removed in any way from any seeds in any kind of cleaning or processing and which contains less than 25 percent of live agricultural or vegetable seeds.

[5 FR 39, Jan. 4, 1940]

§ 201.204 Agricultural Marketing Service.

The term *Agricultural Marketing Service* means the Agricultural Marketing Service of the U.S. Department of Agriculture.

[5 FR 39, Jan. 4, 1940, as amended at 10 FR 13489, Nov. 1, 1945]

§ 201.205 Collector of customs.

The term *collector of customs* includes any person authorized under the customs laws and regulations to perform the duties of a collector of customs.

[5 FR 39, Jan. 4, 1940]

§ 201.206 Pure live seed.

The term *pure live seed* means the product of the percentage of germination plus the hard seed and the percentage of pure seed, divided by 100.

[5 FR 39, Jan. 4, 1940]

§ 201.207 Other definitions.

The definitions for the purposes of Title III of the Federal Seed Act shall include all other definitions in §§ 201.1 through 201.159.

[5 FR 39, Jan. 4, 1940]

SAMPLING

§ 201.208 Seed.

(a) Except as provided in paragraph (b) of this section the collector of customs shall draw and forward samples of all seed imported or offered for importation into the United States except the following kinds which he shall sample only when imported for seeding purposes and when declared for seeding purposes:

Barley.
Bean, adzuki.
Bean, field.
Bean, lima.
Bean, mung.
Broadbean.
Buckwheat common.
Canary grass.
Castorbean.
Celery.
Chickpea.
Corn, field.
Cowpea.
Crambe.
Flax.
Guar.
Hemp.
Lentil.
Lettuce.
Lupine.
Millet, foxtail.
Millet, proso.
Mustard, black.
Mustard, India.
Mustard, white.
Oat.
Parsley.
Pea.
Pea, field.
Peanut.
Pepper.

Pumpkin.
Rape, annual.
Rape, bird.
Rape, turnip.
Rape, winter.
Rice.
Rye.
Safflower.
Sesame.
Sorghum.
Soybean.
Sunflower.
Triticale.
Velvetbean.
Vetch.
Watermelon.
Wheat.

(b) It is not ordinarily practical to sample and test small lots in importations of seed. The size of lots not ordinarily sampled is shown in table 3 in § 201.221a. No release by the United States Department of Agriculture will be necessary for seed not sampled.

[14 FR 6459, Oct. 22, 1949, as amended at 20 FR 7856, Oct. 19, 1955; 24 FR 2269, Mar. 24, 1959; 28 FR 6871, July 4, 1963; 32 FR 12155, Aug. 24, 1967; 35 FR 7411, May 13, 1970; 35 FR 19498, Dec. 23, 1970]

§ 201.209 Screenings.

The collector of customs shall upon request received prior to importation from the Administrator of the Agricultural Marketing Service draw and forward samples of all screenings imported or offered for importation into the United States.

[5 FR 39, Jan. 4, 1940]

§ 201.210 Method of sampling.

(a) In order to secure a representative sample, equal portions shall be taken from evenly distributed parts of the quantity of seed or screenings to be sampled. Access shall be had to all parts of that quantity. When more than one trierful of seed is drawn from a bag, different paths shall be followed. When more than one handful is taken from a bag, the handfuls shall be taken from well-separated points.

(b) For free-flowing seed in bags or bulk, a probe or trier shall be used. For small free-flowing seed in bags a probe or trier long enough to sample all portions of the bag should be used.

(c) Non-free-flowing seed, such as grass seed, uncleaned seed or screenings, difficult to sample with a probe or trier, shall be sampled by thrusting the hand into the bulk and withdrawing representative portions. The hand shall be inserted in an open position and the fingers shall be held closely together while the hand is being inserted and the portion withdrawn.

(d) The portions shall be combined into a composite sample except that if the quantity represented to be a lot does not appear to be of uniform quality as required in paragraph (e) of this section the separate portions shall be forwarded together but without being combined into a composite sample.

(e) A quantity of seed designated as one lot shall be regarded as such for sampling only if every portion or bag of seed in the quantity is uniform within permitted tolerances as to percentage of pure seed, percentage of germination and hard seed, percentage of weed seed, and rate of occurrence of noxious weed seeds.

(f) When an importation consists of more than one lot, each lot shall be sampled separately.

(g) Sampling shall not proceed unless (1) each container is stencilled or otherwise labeled to show the lot designation and the name of the kind, or kind and variety, appearing on the invoice and other entry papers and (2) a ''Declaration of Labeling'' has been filed by the importer of record as required under § 201.228a.

[5 FR 39, Jan. 4, 1940, as amended at 10 FR 9949, Aug. 11, 1945; 14 FR 6459, Oct. 22, 1949; 26 FR 10150, Oct. 31, 1961]

§ 201.211 Bulk.

Bulk seeds or screenings shall be sampled by inserting a long probe or thrusting the hand into the bulk as circumstances require. At least as many trierfuls or handfuls as the minimum required for the same quantity of seed or screenings in bags of a size customarily used for such seed or screenings shall be taken.

[26 FR 10150, Oct. 31, 1961]

§ 201.212 Bags.

(a) For lots of six bags or less, each bag shall be sampled. A total of at least five trierfuls shall be taken.

(b) For lots of more than six bags, five bags plus at least 10 percent of the number of bags in the lot shall be sampled. (Round off numbers with decimals to the nearest whole number, raising 0.5 to the next whole number.) Regardless of the lot size, it is not necessary that more than 30 bags be sampled.

(c) When sampling seed in small containers which it is not practical to sample as required in paragraph (a) or (b) of this section, entire unopened containers may be taken in sufficient number to supply a minimum size sample as required in § 201.213. The sample may consist of the contents of one container, or two or more containers when combined.

[20 FR 7856, Oct. 19, 1955, and 26 FR 10150, Oct. 31, 1961]

§ 201.213 Size of sample.

Samples of agricultural seed shall be not less than 1 quart. Samples of screenings shall be not less than 2 quarts. Samples of vegetable seed shall be not less than 1 pint, except that samples of one-fourth pint will be sufficient from importations of 5 pounds or less. Unused portions of samples of rare or expensive seeds will be returned by the Agricultural Marketing Service upon request of the importer.

[5 FR 38, Jan. 4, 1940, as amended at 10 FR 13489, Nov. 1, 1945]

§ 201.214 Sealing and identifying samples.

Before being forwarded for analysis, test, or examination, the container of each sample shall be properly sealed, and identified in accordance with § 201.215.

[5 FR 39, Jan. 4, 1940]

§ 201.215 Statements to accompany samples.

All samples shall be accompanied by (a) a description of the lot of seed offered for importation, on a form provided for this purpose by the Department of Agriculture and (b) the declaration of labeling required in § 201.228a.

[26 FR 10150, Oct. 31, 1961]

§ 201.216 Forwarding samples.

Samples from the various ports shall be forwarded to seed laboratories in accordance with instructions of the Agricultural Marketing Service to be furnished to customs officers from time to time.

[6 FR 3961, Aug. 8, 1941, as amended at 10 FR 13489, Nov. 1, 1945]

§ 201.217 Notice to consignee.

The collector of customs shall immediately notify the owner or consignee that samples of seeds or screenings have been drawn and that the shipment shall be held intact pending a decision of the Agricultural Marketing Service in the matter.

[5 FR 39, Jan. 4, 1940, as amended at 10 FR 13489, Nov. 1, 1945]

§ 201.218 Delivery under bond.

After samples of seed or screenings offered for importation into the United States from any foreign country have been drawn, such seed or screenings shall be admitted into the commerce of the United States only after the seed or screenings have been found to meet the requirements of the act and the regulations in this part except for those lots not tested for pure live seed due to application of statistical inspection techniques as provided in section 302(a) of the Act: *Provided, however,* That if each container of such seed or screenings is stenciled or labeled to show the name of the kind, or the kind and variety, and a lot number or other designation identifying the lot of seed, collectors of customs may release from customs custody for delivery to the owner or consignee shipments which have been sampled, pending examination and decision in the matter, upon the execution on the appropriate form of either a customs single-entry bond or a customs term bond in such amount as is prescribed for such bond in customs regulations in force on date of entry, which bond shall contain a condition for the redelivery of the seed or screenings or any part thereof upon demand of the collector of customs at any time. Prior to being so admitted, the seed or screenings shall be kept intact and not tampered with in any way, or removed from the containers except

under supervision as provided by regulation. The bond shall be filed with the collector of customs, who, in case of default, shall take appropriate action to effect the collection of liquidated damages equal to the value of the entire shipment as set forth in the entry plus the estimated duty thereon, if any.

[6 FR 3961, Aug. 8, 1941, as amended at 24 FR 2269, Mar. 24, 1959; 32 FR 12155, Aug. 24, 1967]

§ 201.219 Notice of removal.

The owner or consignee shall keep the Agricultural Marketing Service informed as to the location of seed or screenings subject to the act, after sampling by the collector of customs but before being finally admitted into the commerce of the United States.

[5 FR 40, Jan. 4, 1940, as amended at 10 FR 13489, Nov. 1, 1945]

EVIDENCE AS TO COUNTRY OR REGION WHERE SEED WAS GROWN

§ 201.220 Certificate or declaration of origin.

(a) A certificate, attached to the invoice, of the properly authorized official of the foreign country in which the seed was grown, to the effect that the seed of alfalfa or red clover or any mixture of seeds containing 10 percent or more of either or both of such seed was grown in that country, will be regarded as prima facie evidence of such face. This certificate shall be in the following form:

CERTIFICATE OF ORIGIN BY FOREIGN OFFICIAL

City ————————, country ————, date ————————

I, ———————— (Name of official), hereby certify that the seed contained in ———— bags, marked ————————, described in invoice ———————— (Number or date) to which this certificate is attached, was grown in ———————— (Name of country or countries or part thereof).

(Name of official)

(Official title)

(b) A declaration of the shipper attached to the invoice stating the country in which the seed of alfalfa or the seed of red clover or any mixture of seeds containing 10 percent or more of either or both of such seeds was grown will be regarded as prima facie evidence of such fact. The declaration shall be in the following form:

DECLARATION OF ORIGIN BY SHIPPER

City ————————, country ————, date ————————.

I, the undersigned, the shipper of the seed contained in ———————— bags, marked ————————, described in invoice ———————— (Number or date), to which this declaration is attached, do hereby certify that such seed was grown in

————————————————————

(Name of country or countries or part thereof).

(Signature)

(c) If the information contained in the certificate or declaration provided for in paragraphs (a) and (b) of this section is not sufficient to establish the country or region of origin of the seed, or if the consular invoice is not accompanied by such certificate or declaration, other evidence as to the origin may be considered, or the seed may be permitted entry after being stained 10 percent red.

[5 FR 40, Jan. 4, 1940, as amended at 14 FR 335, Jan. 26, 1949]

EXEMPTIONS, DECLARATIONS AND LABELING

§ 201.221 Exemptions.

(a) *Shipments through the United States.* Seed shipped in bond through the United States is not subject to the import requirements of the act.

(b) *United States seed returned.* Seed which has been grown in the United States, exported, and returned from a foreign country, is not subject to the prohibition against the importation of seed that is adulterated or unfit for seeding purposes: *Provided,* That proof in the form of statements or other documents, furnished by the United States importer to the Seed Branch, Agricultural Marketing Service, United States Department of Agriculture, establishes that (1) the seed was grown in the United States and was exported, (2) the seed was not admitted into the commerce of a foreign country, and (3) the seed was not commingled with other seed after

being exported. The information required in paragraph (b)(1) of this section shall include the quantity of seed and number of containers, the date of exportation from the United States, the distinguishing marks on the containers at the time of exportation, and the name and address of the United States exporter. The information required in paragraphs (b)(2) and (3) of this section shall be contained in a statement or document issued by a customs or other Government official of the foreign country.

(c) *Seed for experimental or breeding purposes.* Any lot of seed imported for sowing for experimental or breeding purposes and not for sale is not subject to the prohibition against the importation of seed that is adulterated or unfit for seeding purposes: *Provided,* That (1) a declaration is filed by the importer with the Seed Branch, Consumer and Marketing Service, United States Department of Agriculture, as specified in this paragraph, and (2) the quantity of seed in the lot will not exceed that shown in table 4 in § 201.221a for such seed. Seed imported for increase purposes only will not be considered to be imported for experimental or breeding purposes. The declaration required to be filed shall be substantially as shown in paragraph (d) of this section.

(d) *Seed for seed production only.* Any lot of seed imported for sowing for seed production only, by or for the importer or consignee, and not to be sold within the United States is not subject to the prohibition against the importation of seed that is (1) adulterated or unfit for seeding purposes because of low pure live seed, or (2) required to be stained: *Provided,* That a declaration is filed by the importer with the Seed Branch, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture, substantially as specified below:

DECLARATION

SEED FOR EXPERIMENTAL OR BREEDING PURPOSES OR SEED FOR SEED PRODUCTION ONLY

The undersigned declares: That he is a resident of ———— (Street, city, and State); that he is (owner of) (employed by) the firm of —— (as a ————); that he (is) (represents) the (owner) (consignee) of the —— pounds of ———— (Kind of seed) seed ordered for importation at ———— (Port of entry) under entry No. —— and contained in ———— bags or containers marked ———— as described in invoice No. —— dated ————; that said seed is being imported for (making selections, crosses, or tests, or for other experimental or breeding purposes) or (seed production only) and will not be sold.

Signed ————

Date: ————

[24 FR 2269, Mar. 24, 1959, as amended at 32 FR 12155, Aug. 24, 1967]

§ 201.221a Table 5.

	Weight of seed lot not ordinarily sampled, less than—(Pounds)	Weight of seed lot permitted entry for experimental or breeding purposes, not more than—(Pounds)
VEGETABLE SEEDS		
Artichoke	25	50
Asparagus	25	50
Asparagusbean	25	50
Bean	25	200
Bean, garden	100	500
Bean, lima	25	200
Bean, runner	25	200
Beet	25	50
Broadbean	25	200
Broccoli	5	10
Brussels sprouts	5	10
Burdock, great	10	50
Cabbage	5	10
Cabbage, tronchuda	5	10
Cantaloupe (see Muskmelon).		
Cardoon	25	50
Carrot	5	10
Cauliflower	5	10
Celeriac	5	10
Celery	5	10
Chard, Swiss	25	50
Chicory	5	10
Chinese cabbage	5	10
Chives	5	10
Citron	25	50
Collards	5	10
Corn, sweet	25	200
Cornsalad	5	10
Cowpea	25	200
Cress, garden	5	10
Cress, upland	5	10
Cress, water	5	10
Cucumber	25	50
Dandelion	5	10
Eggplant	5	10
Endive	5	10
Kale	5	10
Kale, Chinese	5	10
Kale, Siberian	5	10
Kohlrabi	5	10
Leek	5	10
Lettuce	5	10
Muskmelon	25	50
Mustard, India	25	100

	Weight of seed lot not ordinarily sampled, less than—(Pounds)	Weight of seed lot permitted entry for experimental or breeding purposes, not more than—(Pounds)
Mustard, spinach	5	10
Okra	25	50
Onion	5	10
Onion, Welsh	5	10
Pak-choi	5	10
Parsley	5	10
Parsnip	5	10
Pea	25	200
Pepper	5	10
Pumpkin	25	50
Radish	25	50
Rhubarb	5	10
Rutabaga	5	10
Salsify	25	50
Sorrel	5	10
Soybean	25	200
Spinach	25	50
Spinach, New Zealand	25	50
Squash	25	50
Tomato	5	10
Tomato, husk	5	10
Turnip	5	10
Watermelon	25	50
AGRICULTURAL SEEDS		
Alfalfa	25	100
Alfilaria	25	100
Alyceclover	25	100
Bahiagrass	25	100
Barrelclover	25	100
Barley	100	500
Bean, adzuki	100	500
Bean, field	100	500
Bean, mung	100	500
Bean (see Velvetbean)		
Beet, field	100	500
Beet, sugar	100	1,000
Beggarweed	25	100
Bentgrass, colonial	25	100
Bentgrass, creeping	25	100
Bentgrass, velvet	25	100
Bermudagrass	25	100
Bermudagrass, giant	25	100
Bluegrass, bulbous	25	100
Bluegrass, Canada	25	100
Bluegrass, glaucantha	25	100
Bluegrass, Kentucky	25	100
Bluegrass, Nevada	25	100
Bluegrass, rough	25	100
Bluegrass, Texas	25	100
Bluegrass, wood	25	100
Bluestem, big	25	100
Bluestem, little	25	100
Bluestem, sand	25	100
Bluestem, yellow	25	100
Brome, field	25	100
Brome, mountain	25	100
Brome, smooth	25	100
Broomcorn	100	500
Buckwheat	100	500
Buffalograss	25	100
Bur-clover, California	25	100
Bur-clover, spotted	25	100
Burnet, little	25	100
Buttonclover	25	100
Canarygrass	25	100
Canarygrass, reed	25	100
Carpetgrass	25	100
Castorbean	100	500
Chess, soft	25	100
Chickpea	100	500
Clover, alsike	25	100
Clover, berseem	25	100
Clover, cluster	25	100
Clover, crimson	25	100
Clover, Kenya	25	100
Clover, large hop	25	100
Clover, small hop (suckling)	25	100
Clover, ladino	25	100
Clover, lappa	25	100
Clover, Persian	25	100
Clover, red or	25	100
Red clover, mammoth	25	100
Red clover, medium	25	100
Clover, rose	25	100
Clover, strawberry	25	100
Clover, sub (subterranean)	25	100
Clover, white (also see clover, ladino)	25	100
Clover, (also see Alyce-clover, Bur-clover, Buttonclover, Sourclover, Sweetclover).		
Corn, field	100	1,000
Corn, pop	100	1,000
Cotton	100	500
Cowpea	100	500
Crambe	25	100
Crested dogtail	25	100
Crotalaria, lance	25	100
Crotalaria, showy	25	100
Crotalaria, slenderleaf	25	100
Crotalaria, striped	25	100
Crotalaria, Sunn	25	100
Crownvetch	25	100
Dallisgrass	25	100
Dichondra	25	100
Dropseed, sand	25	100
Emmer	100	500
Fescue, Chewings	25	100
Fescue, hair	25	100
Fescue, hard	25	100
Fescue, meadow	25	100
Fescue, red	25	100
Fescue, sheep	25	100
Fescue, tall	25	100
Flax	25	100
Grama, blue	25	100
Grama, side-oats	25	100
Guar	25	100
Guineagrass	25	100
Hardinggrass	25	100
Hemp	100	500
Indiangrass, yellow	25	100
Indigo, hairy	25	100
Japanese lawngrass	25	100
Johnsongrass	25	100
Kudzu	25	100

	Weight of seed lot not ordinarily sampled, less than—(Pounds)	Weight of seed lot permitted entry for experimental or breeding purposes, not more than—(Pounds)
Lentil	25	100
Lespedeza, Korean	25	100
Lespedeza, sericea or Chinese	25	100
Lespedeza, Siberian	25	100
Lespedeza, striate	25	100
Lovegrass, sand	25	100
Lovegrass, weeping	25	100
Lupine, blue	100	500
Lupine, white	100	500
Lupine, yellow	100	500
Manilagrass	25	100
Meadow foxtail	25	100
Medick, black	25	100
Millet, browntop	25	100
Millet, foxtail	25	100
Millet, Japanese	25	100
Millet, pearl	25	100
Millet, proso	25	100
Molassesgrass	25	100
Mustard, black	25	100
Mustard, India	25	100
Mustard, white	25	100
Napiergrass	25	100
Oat	100	500
Oatgrass, tall	25	100
Orchardgrass	25	100
Panicgrass, blue	25	100
Panicgrass, green	25	100
Peanut	100	500
Pea, field	100	500
Poa trivialis (see bluegrass, rough).		
Rape, annual	25	100
Rape, bird	25	100
Rape, turnip	25	100
Rape, winter	25	100
Redtop	25	100
Rescuegrass	25	100
Rhodesgrass	25	100
Rice	100	500
Ricegrass, Indian	25	100
Roughpea	100	500
Rye	100	500
Ryegrass, Italian	25	100
Ryegrass, perennial	25	100
Ryegrass, Wimmers	25	100
Safflower	100	500
Sainfoin	100	500
Seasame	25	100
Sesbania	25	100
Smilo	25	100
Sorghum	100	1,000
Sorghum alum	25	100
Sorghum sudangrass hybrid	100	1,000
Sorgrass	25	100
Sourclover	25	100
Soybean	100	500
Spelt	100	500
Sudangrass	25	100
Sunflower	100	500
Sweetclover, white	25	100
Sweetclover, yellow	25	100
Sweet vernalgrass	25	100
Switchgrass	25	100
Timothy	25	100
Tobacco	1	1
Trefoil, big	25	100
Trefoil, birdsfoot	25	100
Triticale	100	500
Vaseygrass	25	100
Veldtgrass	25	100
Velvetbean	100	500
Velvetgrass	25	100
Vetch, common	100	500
Vetch, hairy	100	500
Vetch, Hungarian	100	500
Vetch, Monantha	100	500
Vetch, narrowleaf	100	500
Vetch, purple	100	500
Vetch, woolypod	100	500
Wheat, common	100	500
Wheat, club	100	500
Wheat, durum	100	500
Wheat, Polish	100	500
Wheat, poulard	100	500
Wheatgrass, beardless	25	100
Wheatgrass, fairway crested	25	100
Wheatgrass, standard crested	25	100
Wheatgrass, intermediate	25	100
Wheatgrass, pubescent	25	100
Wheatgrass, slender	25	100
Wheatgrass, streambank	25	100
Wheatgrass, tall	25	100
Wheatgrass, Siberian	25	100
Wheatgrass, western	25	100
Wild-rye, Canada	25	100
Wild-rye, Russian	25	100
Zoysia Japonica (see Japanese lawngrass).		
Zoysia matrella (see Manilagrass).		

[24 FR 2269, Mar. 24, 1959, as amended at 26 FR 10150, Oct. 31, 1961; 28 FR 6871, July 4, 1963; 32 FR 12155, Aug. 24, 1967; 35 FR 7411, May 13, 1970]

§ 201.222 Declaration of purpose and labeling as to kind, variety, hybrid, and treatment.

(a) Entries covering all importations of seed of:

Barley
Bean, Adzuki
Bean, field
Bean, lima
Bean, mung
Buckwheat, common
Canary grass
Castorbean
Celery
Chickpea
Corn, field

Cowpea
Crambe
Flax
Guar
Hemp
Horse or broad mean
Lentil
Lettuce
Lupine
Millet, foxtail, German, Hungarian, and golden
Millet, proso
Mustard, black
Mustard, India
Mustard, white
Oat
Parsley
Pea
Pea, field
Peanut
Pepper
Pumpkin
Rape, annual
Rape, bird
Rape, turnip
Rape, winter
Rice
Rye
Safflower
Sesame
Sorghum
Soybean
Sunflower
Triticale
Velvetbean
Vetch
Watermelon
Wheat

shall contain a statement by the importer setting forth the use for which imported. When imported for seeding purposes such seed is subject to the import provisions of the act.

(b) [Reserved]

(c) If any seed enumerated in this section is declared for seeding purposes and is found upon examination by the Agricultural Marketing Service not to meet the requirements of the Federal Seed Act, the importer shall be permitted to withdraw his declaration made under this section upon notification from the Agricultural Marketing Service that the seed may be released for feeding or manufacturing purposes. In this event, the importer shall be required to file a new declaration that no part of the importation will be used for seeding purposes.

(d) The collector of customs shall notify the Department of Agriculture of any change in the nature of a declaration made under this section.

(e) The invoice and any other labeling pertaining to agricultural or vegetable seed offered for importation shall bear the lot identification, the name of each kind and variety of vegetable seed present, or kind or kind and variety of agricultural seed present, in excess of 5 percent of the whole, and the designation ''hybrid'' when it is hybrid seed as defined under § 201.2(y).

(f) Any agricultural seed or mixture thereof or any vegetable seed or mixture thereof offered for importation for seeding purposes that has been treated shall be labeled as provided in § 201.31(a) of the regulations of the Secretary of Agriculture.

[5 FR 40, Jan. 4, 1940]

EDITORIAL NOTE: For Federal Register citations affecting § 201.222, see the List of CFR Sections Affected in the Finding Aids section of this volume.

SCREENINGS

§ 201.223 Screenings prohibited entry.

Screening of all seed subject to the Federal Seed Act are prohibited entry into the United States except as provided under § 201.224.

[5 FR 40, Jan. 4, 1940]

§ 201.224 Screenings permitted entry.

Screenings consisting of wheat, oats, rye, barley, buckwheat, field corn, sorghum including broomcorn, flax, millet, Proso, soybeans, cowpeas, field peas, and field beans may be imported, provided such screenings are not imported for seeding purposes and are so declared by the words ''screening for processing, not for seeding'' in the invoice or other papers required to be presented to the collector of customs.

[5 FR Jan. 4, 1940, as amended at 24 FR 2270, Mar. 24, 1959]

SEED ADULTERATED OR UNFIT FOR SEEDING PURPOSES

§ 201.225 Cleaning or processing.

Seed which is found under the provisions of the act to be adulterated or unfit for seeding purposes may be cleaned or processed under the supervision of an employee or authorized agent of the U.S. Department of Agriculture. The cleaning or processing

shall be at the expense of the owner or consignee who shall reimburse the Government for all expenses incurred in connection with such supervision, including travel, per diem or subsistence, and salaries of officers or employees of the United States. Travel and per diem or subsistence expenses shall be reimbursed at the rate allowed for employees of the United States in accordance with Standardized Government Travel Regulations. Salary shall be reimbursed at the average rate paid to employees engaged in supervision activities plus average related costs. The identity of the seed shall be maintained at all times to the satisfaction of the persons supervising the cleaning or processing. The refuse from such cleaning shall be placed in containers and securely sealed and identified. If upon analysis, test, or examination of a representative sample of the cleaned seed, it is found that the requirements of the act have been met, that portion of the seed may be admitted.

[5 FR 40, Jan. 4, 1940, as amended at 24 FR 2270, Mar. 24, 1959; 26 FR 10150, Oct. 31, 1961]

§ 201.226 Destruction of refuse.

The refuse from such cleaning shall be destroyed under the supervision of an employee or authorized agent of the U.S. Department of Agriculture. The destruction of refuse shall be at the expense of the owner or consignee who shall reimburse the Government for all expenses incurred in connection with such supervision, including travel, per diem or subsistence, and salaries of officers or employees of the United States. Travel and per diem or subsistence expenses shall be reimbursed at the rate allowed for employees of the United States in accordance with Standardized Government Travel Regulations. Salary shall be reimbursed at the average rate paid to employees engaged in supervision activities plus average related costs.

[5 FR 40, Jan. 4, 1940, as amended at 24 FR 2270, Mar. 24, 1959; 26 FR 10150, Oct. 31, 1961]

§ 201.227 Report to collector of customs.

A report of the cleaning and processing and the destruction of the refuse, stating the amount by weight in each instance, shall be submitted to the collector of customs at the port of entry of such seed by the Agricultural Marketing Service.

[5 FR 40, Jan. 4, 1940]

MISBRANDED SEED

§ 201.228 Correction of labeling.

Seed being imported or offered for importation, the labeling of which is false or misleading in any respect, shall be refused admission into the commerce of the United States until such labeling has been corrected to meet the requirements of the act and the rules and regulations in this part. Any correction of the labeling upon the containers shall be done under the supervision of the U.S. Department of Agriculture at the expense of the owner or consignee, who shall reimburse the Government for all expenses incurred in connection with such supervision, including travel, per diem or subsistence, and salaries of officers or employees of the United States. Travel and per diem or subsistence expenses shall be reimbursed at the rate allowed for employees of the United States in accordance with Standardized Government Travel Regulations. Salary shall be reimbursed at the average rate paid to employees engaged in supervision activities plus average related costs. When a representative of the Department of Agriculture finds upon examination of seed that it is incorrectly described on the invoice presented at the time of entry, a finding of ''false labeling'' under the Federal Seed Act of August 9, 1939, will be made. The seed will be refused admission until after the importer has given satisfactory assurance to the Department of Agriculture that he has taken appropriate steps to file with the collector of customs at the port of entry a corrected customs invoice describing the seed in terms which will not constitute ''false labeling.'' Upon receipt of such assurance, the Department of Agriculture will notify the collector of the nature of the ''false labeling'' and that the seed may be granted admission under the Federal Seed Act. The importer will be liable for the payment of liquidated damages under the bond filed in connection with the entry unless a corrected customs

invoice is produced within the time provided for by law or regulations.

[5 FR 40, Jan. 4, 1940, as amended at 10 FR 9949, Aug. 11, 1945; 24 FR 2270, Mar. 24, 1959; 26 FR 10150, Oct. 31, 1961]

§ 201.228a Declaration of labeling.

For each importation of seed the importer shall submit with the entry papers a copy of the commercial invoice showing thereon or on a statement attached thereto, for each lot, under the heading ''Declaration of Labeling,'' any information on or attached to the containers of the seed regarding the kind or kind and variety; distinguishing marks; origin; percentages of pure seed, weed seed, inert matter, other crop seed, pure live seed, germination, and hard seeds; the date of test; the name and rate of occurrence of noxious-weed seeds; and the name of any substance or process used in treating the seed: *Provided,* That a declaration of labeling shall not be required for any kind of seed enumerated in § 201.222 that is imported for other than seeding purposes.

[28 FR 6871, July 4, 1963]

MIXING SEED

§ 201.229 Prohibition against and exception.

Mixing any seed or screenings with a lot or shipment of seed or screenings offered for entry which has been found to be in violation of the act or the regulations in this part is prohibited, except that in cases where it shall appear to the satisfaction of the Administrator of the Agricultural Marketing Service that two or more such lots or shipments of seed or screenings offered for entry are of substantially the same quality and origin, they may be mixed for the purpose of recleaning upon a written permit from the Administrator of the Agricultural Marketing Service.

[5 FR 40, Jan. 4, 1940]

REJECTED SEED OR SCREENINGS

§ 201.230 Exportation or destruction.

(a) Seed or screenings refused admission into the commerce of the United States shall be exported under customs supervision by the owner or consignee within 12 months of the date of notice of such refusal or at the expiration of such 12-month period the rejected seed or screenings shall be destroyed under the supervision of an employee or authorized agent of the United States Department of Agriculture in such manner as may be determined by the United States Department of Agriculture.

(b) When seed or screenings which have been refused admission into the commerce of the United States are exported the collector of customs shall notify the office of the United States Department of Agriculture that issued the notice of rejection and shall also submit to said office a sample drawn from the seed at the time of exportation.

(c) The destruction of seed or screenings refused admission shall be at the expense of the owner or consignee who shall reimburse the Government for all expenses incurred in connection with such supervision, including travel, per diem or subsistence, and salaries of officers and employees of the United States. Travel and per diem or subsistence expenses shall be reimbursed at the rate allowed for employees of the United States in accordance with Standardized Government Travel Regulations. Salary shall be reimbursed at the average rate paid to employees engaged in supervision activities plus average related costs. The United States Department of Agriculture shall make a report of such destruction giving the amount by weight to the collector of customs at the port of entry of such seed or screenings.

[10 FR 9949, Aug. 11, 1945, as amended at 20 FR 7856, Oct. 19, 1955; 24 FR 2270, Mar. 24, 1959; 26 FR 10150, Oct. 31, 1961]

PART 202—FEDERAL SEED ACT RULES OF PRACTICE

Subpart A—General

Sec.