(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 × Agrotricum, and triticale.

(i) General description.
(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.
Agricultural Marketing Service, USDA

§ 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.

(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) None.

(B) Spindly, stubby, or watery primary root even if other roots are present.

(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).

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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.

(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) None.

(B) Spindly, stubby, or watery primary root even if other roots are present.

(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).

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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.

(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) None.

(B) Spindly, stubby, or watery primary root even if other roots are present.

(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).

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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.

(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) None.

(B) Spindly, stubby, or watery primary root even if other roots are present.

(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).

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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.

(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) None.

(B) Spindly, stubby, or watery primary root even if other roots are present.

(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).