

## Section 7: Purity

1. What is considered the seed unit?
2. What publications govern the classification of weed and crop seed?
3. The seed or "seed like" structures of the following families are characterized below. Choose from them to answer the following three descriptions.

Gramineae (grass family)

Leguminosae (legume family)

Polygonaceae (smartweed family)

Chenopodiaceae (goosefoot family)

Compositae (sunflower family)

"Seeds," one-seeded fruits typically bearing a cluster of hairs or bristles at the top.

"Seeds," one-seeded fruits usually enclosed by a pair of bracts known as the lemma and palea.

"Seeds," a one-seeded fruit (achene) flattened on three angles, usually pointed at the upper end, surface hard, frequently shiny, usually smooth.

4. What grasses are considered chaffy grasses under the rules for seed testing?
5. Define Multiple Seed Unit

12. How are the purity and noxious samples determined for mixtures consisting of seeds of one predominate kind or groups of kinds of similar size?
13. How are the working samples weights determined for kinds or groups of kinds of different sizes, none of which comprises over 50% of the sample?
14. What are stone cell bodies? What noxious weed can they be confused with?
15. How can you prove a structure is a nematode gall?  
What kinds of grasses tend to be infested with nematode galls?  
How do you recognize them?
16. What is a sporocarp?
17. What condition may different kinds and varieties present to the extent of 5% of less be considered as pure seeds?

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6. In making a purity test, on which grasses would you not remove the sterile florets from the fertile ones?
7. Would you consider a ryegrass as a crop or inert if over half of the root shoot axis of the embryo was missing?
8. What is an involucre?
9. What is a pericarp?
10. Why are damaged weed seeds classified differently than damaged crop seeds?
11. Illustrate the position of the embryo in cuscuta spp., rumex, cruciferae and in polygonum spp., why is it important to know this position?

18. Define pure seed.
19. When the working sample consists of two or more similar kinds or cultivars, it is permissible to do what?
20. How is the separation on the reduced portion done?
21. What seed weight is to be used for the noxious weed examination?
22. Check which are to be considered *pure* crop seed and *weed* seeds, or *inert* matter.
  - a. Seed balls of beets
  - b. Small fragments of beet balls obviously empty
  - c. Blind diseased ryegrass
  - d. Empty sunflower seed
  - e. Nematode galls
  - f. Chalcid fly damaged seed
  - g. Weevil infested vetch with little or no opening in seed coat
  - h. Seeds of legumes and crucifers with seed coat entirely removed
  - i. Pieces of broken or damaged crop seeds one-half or less than original size
  - j. Allium bulblets that show damage to basal end with some seed coat remaining
  - k. Buckhorn seeds black, no brown color evident under 10 x magnification
  - l. Ragweed with only the involucre present
  - m. Immature, shriveled and crushed seed of the kind under consideration
  - n. Empty seed of Buckwheat
  - o. Multiple florets and entire spikelets of barley, bluegrass and oats
  - p. Seeds that have started to germinate
  - q. Single seeds of Juncus

22. Check which are to be considered *pure* crop seed and *weed* seeds, or *inert* matter.  
(Contd.)
- r. Smut balls and fungus bodies
  - s. Seed units of grasses in which the caryopses are spongy or corky
  - t. Immature florets of Quackgrass in which the caryopses are less than 1/3 the length of the palea
  - u. Dodder with coiled embryo present
  - v. Ragweed with involucre and pericarp absent
  - w. Empty seeds of pepper and tomato
  - x. Onions large enough to stay on sieve, no skin or damage.
  - y. Buckwheat seed without the seed coat
  - z. Ergot and smut filled caryopses of dallisgrass and bahigrass

23. What is the proper procedure in dividing samples

Mechanically:

By Hand:

24. Describe the proper use of a gamete divider.

25. Describe the uniform blowing method.
26. What is the pure seed rule for cucurbitaceae and solanaceae seeds?
27. How shall the burs of buffalograss be classified if it is visibly empty?
28. For what kinds of seed is the uniform blowing method used?
29. Describe the alternate method as used for orchardgrass example.

30. As used for Fescue.
31. When is a seed unit with nematode galls, fungus bodies. (ergot, smut)
32. Ergot and smut filled aryopses of dallisgrass and bahigrass is inert matter when?
33. Give the procedure for determining the percentage of yellow blossom sweet clover in a sample of white blossom sweet clover.
34. Describe the use of the florescence test on ryegrass.
35. How much difference is allowed between the original and final weight?

36. Describe procedure in calculating component parts of a sample weighting.

Less than 25 grams:

25 grams or more:

37. Should the size of the working sample be changed from the prescribed amount in the rules?

38. On what approximate number of seed is the weight of a purity test determined?

39. What is considered pure seed using the 5% rule?

40. You are making a purity analysis on a kind of seed for which there is no recommended weight for the working sample. How do you determine the proper weight for the working sample?

