2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

- Please be sure you are using the most up-to-date versions of all documents.
  Federal Seed Act: eCFR :: 7 CFR Part 201 -- Federal Seed Act Requirements
  Canadian M&P: MP-2025-English.pdf
  AOSA Rules for Testing Seeds, Volume 1

For the first six questions, select the applicable set of Rules/Regulations for the statement:

1. When the purity analysis is for numbers of impurities (weed seeds of the different classes, sweet clover, other crop seeds, ergot, etc.) per unit weight, the total working sample weight is the total of the quantities given in columns 3, 4, and 5 of Section 2.3.4 Table 1.
   a. Federal Seed Act
   b. Canadian M&P
   c. AOSA Rules for Testing Seeds
   Section 2.3.1

2.3.1 Weights for analysis for numbers per unit weight

When the analysis is for numbers of impurities (weed seeds of the different classes, sweet clover, other crop seeds, ergot, etc.) per unit weight, the total working sample weight is the total of the quantities given in columns 3, 4 and 5 of Section 2.3.4 Table 1. At the time of sub-sampling from the

2. The working samples for purity analysis and noxious weed seed examination of unmixed seed shall be at least the weights set forth in Table 1.
   a. Federal Seed Act
   b. Canadian M&P
   c. AOSA Rules for Testing Seeds
   Section 201.46

§ 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.

Everyone who answered Canadian M&P also received credit for this question.

3. The weight of the working samples for the purity analysis, noxious-weed-seed examination, and bulk examination shall not be less than that prescribed in Table

2A, except as noted. The working weights listed in Table 2A are based on the approximate weight of 2,500 pure seed units for the purity analysis and 25,000 pure seed units for the noxious-weed-seed and bulk examinations (unless otherwise specified in Table 2A).

a. Federal Seed Act
b. Canadian M&P
c. AOSA Rules for Testing Seeds

Section 2.3 b. (1)

> (1) **Single kinds listed in Table 2A.** The weight of the working samples for the purity analysis, noxious-weed seed examination and bulk examination shall not be less than that prescribed in Table 2A, except as noted in (3) below. The working weights listed in Table 2A are based on the approximate weight of 2,500 pure seed units for the purity analysis and 25,000 pure seed units for the noxious weed seed and bulk examinations (unless otherwise specified in Table 2A). Working sample weights

4. When a germination test is conducted, the following information must be reported under Germination Test: (1) Percentage of normal seedlings as a whole number (refer to section 6.7). (2) Percentage of hard seed, if applicable, as a whole number (refer to section 6.7). (3) Percentage of dormant seeds, if applicable, as a whole number (refer to section 6.7).

a. Federal Seed Act
b. Canadian M&P
c. AOSA Rules for Testing Seeds

Section 15 k.

> k. When a germination test is conducted the following information must be reported under Germination Test:
>
> (1) Percentage of normal seedlings as a whole number (refer to section 6.7).
> (2) Percentage of hard seed, if applicable, as a whole number (refer to section 6.7).
> (3) Percentage of dormant seeds, if applicable, as a whole number (refer to section 6.7).

5. The label shall show the percentage of germination for each kind, kind and variety, kind and type, or kind and hybrid of agricultural seed comprising 5 percent of the whole or less if the seed is identified individually on the label.

a. Federal Seed Act
b. Canadian M&P

c. AOSA Rules for Testing Seeds
Section 201.20

§ 201.20 Germination

The label shall show the percentage of germination for each kind, kind and variety, kind and type, or kind and hybrid of agricultural seed comprising more than 5 percent of the whole. The label shall show the percentage of germination for each kind, kind and variety, kind and type, or kind and hybrid of agricultural seed comprising 5 percent of the whole or less if the seed is identified individually on the label.

6. The germination result is to be reported as a percentage germination plus hard seeds (see section 4.10.7.) calculated to the nearest whole number. (See section 4.11.c.) when a germination test was undertaken, or a germination test component was not looked for, enter "-" in the appropriate space on the Report of Analysis.
   a. Federal Seed Act
   b. Canadian M&P
   c. AOSA Rules for Testing Seeds
   Section 1.3.3 a.

a. **The germination result**, is to be reported as a percentage germination or germination plus hard seeds (See Section 4.10.7) calculated to the nearest whole number. (See Section 4.11.5.c)

When a germination test was not undertaken, or a germination test component was not looked for, enter "-" in the appropriate space on the Report of Analysis.

7. The minimum required size of sample submitted to the laboratory for testing is defined in Section (a)_201.43_ of the Federal Seed Act, Volume 1, Section (b) _1.4_ of the AOSA Rules for Testing Seeds, and in Section 2.3.4, Table (c) _1_ of the Canadian M&P.
   FSA: Section 201.43

§ 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:

AOSA: Vol. 1, Section 1.4

This was the intended answer – however, since this section states "recommended" sample size instead of "required" as in the question, everyone who answered Section 2.3 was also given credit for this question.

1.4 Size of sample

a. **The following are recommended minimum weights for samples of seed to be submitted for analysis, test, or examination. The required minimum submitted sample weights must be of sufficient size for the desired testing to be conducted. The required minimum sample weights are stated in AOSA Rules Vol. 1 section 1.4.a.(5-8) and section 2.4.**

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

M&P: Section 2.1.1

"For crop kinds listed in Schedule I to the *Seeds Regulations*, the minimum size of the submitted sample will be that in Section 2.3.4 Table 1 of the M&P. For crop kinds not in Schedule I, the

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

8. For each of the following species, **select all** applicable Rule/Regulations with guidelines for using the Uniform Blowing Procedure.
    a. *Poa pratensis* (Kentucky Bluegrass)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    b. *Poa compressa* (Canada Bluegrass)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    c. *Poa trivialis* (Rough Bluegrass)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    d. *Puccinellia distans* (Alkaligrass)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    e. *Paspalum notatum* ('Pensacola' Bahiagrass)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    f. *Agrostis gigantea* (Redtop)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    g. *Agrostis* spp. ("other *Agrostis* species")
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds
    h. *Dactylis glomerata* (Orchardgrass)
        a) Federal Seed Act
        b) Canadian M&P
        c) AOSA Rules for Testing Seeds

    i. *Bouteloua gracilis* (Blue Grama)

a) Federal Seed Act
b) Canadian M&P
c) AOSA Rules for Testing Seeds

j. *Bouteloua curtipendula* (Side-oats grama)

a) Federal Seed Act
b) Canadian M&P
c) AOSA Rules for Testing Seeds

FSA: Section 201.51a

§ 201.51a Special procedures for purity analysis.

(a) The laboratory analyst shall use the Uniform Blowing Procedure described in this paragraph to separate 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.

AOSA: Section 3.6b.

b. **Purpose:** The uniform blowing procedure shall be used for separation of pure seed and inert matter in the following: Kentucky bluegrass (*Poa pratensis*), Canada bluegrass (*P. compressa*), rough bluegrass (*P. trivialis*), weeping alkaligrass (*Puccinellia distans*), 'Pensacola' variety of bahiagrass *(Paspalum notatum),* orchardgrass (*Dactylis glomerata*), blue grama (*Bouteloua gracilis*), and side-oats grama (*B. curtipendula*).

M&P: Section 3.7

The Uniform Blowing Method must be used as part of the procedure for determination of percentage pure seed for *Dactylis glomerata* and certain species of *Poa* and *Agrostis* as listed below. The quantity

3.7.2 Procedure for Poa species

a. Blow 1g of seed for exactly 3 minutes

(i). *Poa pratensis* - UBP

(ii). *Poa compressa* - UBP X 0.97

(iii). *Poa trivialis* - UBP X 0.82

3.7.3 Procedure for *Agrostis* species

(i). *Agrostis gigantea* - UBP X 0.68.

(ii). Other species of *Agrostis*:

3.7.4 Procedure for *Dactylis glomerata*

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

For the following questions, refer to the Federal Seed Act.

9. **True** or **False** The Federal Seed Act specifies what type of divider must be used for each species.
   Section 201.45

> **§ 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.

10. Seeds consisting of more than one kind or variety, each present in excess of 5 percent by weight of the whole are a:
    a. Lot of seed
    b. Mixture
    c. Hybrid
    d. Off-type

    Section 201.2 (p)

> (p) ***Mixture.*** The term "mixture" means seeds consisting of more than one kind or variety, each present in excess of 5 percent by weight of the whole. A mixture of varieties of a single kind may be labeled as a blend.

11. In a noxious-weed seed test, the number of individual seeds shall be determined in (select all that apply):
    a. Capsules of dodder (*Cuscuta* spp.)
    b. Berries of nightshade (Solanaceae)
    c. Seeds of johnsongrass (*Sorghum* spp.)
    d. Burs of cocklebur (*Xanthium* spp.)

    Section 201.52 (a)

The question was only intended to have the answers plainly stated in the FSA, however, c. is also not wrong… so, everyone who chose at least a., b., and d., as well as those who additionally selected c. was given credit for this question.

> 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

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

12. 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; pure seed, and other crop seed, weed seed, and inert matter. In making this separation, at least _____ of the quantity required for a regular purity analysis shall be used.
    a. 1/2
    b. 1/3
    c. 1/5
    d. 1 /4

    Section 201.53 (c)

> (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 $^{1}/_{4}$ 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.

13. **True** or **False** A fungal endophyte test may be used to determine the amount of fungal endophyte (*Acremonium* spp.) in certain grasses.
    Section 201.58d

> **§ 201.58d Fungal endophyte test.**
>
> A fungal endophyte test may be used to determine the amount of fungal endophyte (*Acremonium* spp.) in certain grasses.

14. Classes of certified seed are (select all that apply):
    a. Registered
    b. Breeder
    c. Foundation
    d. Certified

    Section 201.69

> **§ 201.69 Classes of certified seed.**
>
> (a) Classes of certified seed are as follows:
>
> (1) Breeder.
>
> (2) Foundation.
>
> (3) Registered.
>
> (4) Certified.

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

15. The tolerance for pure live seed shall be determined by applying the respective tolerances to the germination plus the _____ _____ and dormant seed, and pure seed.
    a. Hard seed
    b. Abnormal seedlings
    c. Dead seeds
    d. Weed seed

Section 201.64

§ 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 dormant seed, and the pure seed.

16. No more than _____ 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.
    a. 6
    b. 8
    c. 12
    d. 5

Section 201.22 & Section 201.30a

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

17. Each person transporting or delivering for transportation in interstate commerce agricultural or vegetable seed subject to the Act shall keep for a period of (a) _3 years_ a complete record of each lot of such seed so transported or delivered, including a sample representing each lot of seed, except that any seed sample may be discarded (b) _1 year_ after the entire lot represented by such sample has been disposed of by such person.

Section 201.4

§ 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.

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

18. Blank spaces on the label shall be determined to imply the word "_____".
    a. None
    b. Undetermined
    c. Free
    d. Not tested

Section 201.35

§ 201.35 Blank spaces.

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

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

The following questions reference the AOSA Rules for Testing Seeds.

19. According to the AOSA Rules, "The trier commonly referred to as the '_____ _____' is not appropriate for obtaining a representative seed sample, because it obtains seed only from the outermost portion of the container."
    a. Nobbe Type
    b. Double Sleeve
    c. Thief Trier
    d. Partitioned Trier

    Section 1.2

> **Note**: The trier commonly referred to as the "Thief Trier" is not appropriate for obtaining a representative seed sample, because it obtains seed only from the outermost portion of the container.

20. **True** or **False** Only samples submitted for mechanical seed counts shall be packed in moisture-proof containers.

    Section 1.5 c. & d.

> c. Samples submitted for moisture testing or mechanical seed counts shall be packed in moisture-proof containers.
>
> d. Coated, encrusted, or pelleted seed shall be forwarded in firmly packed crush-proof, moisture-proof containers.

21. **True** or **False** If the allowed extension of a germination test falls on a weekend or public holiday, the test may be extended to the first working day following.

    Section 6.9 d. (4)

> (4) If at the end of the prescribed test period, the seedlings are not sufficiently developed for positive evaluation, the test may be extended two more days. If the allowed extension falls on a weekend or public holiday, the test may be extended to the first working day following.

22. TZ is a biochemical seed viability test using the compound 2,3,5 triphenyl tetrazolium chloride, which is reduced to _Formazan_ in the presence of living (actively respiring) tissue.

    Section 8.1 a.

> containing TTC. The TTC is reduced to formazan in the presence of living (actively respiring) tissue. Formazan stains the living tissue red. At the end of the test, seeds

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

23. Methods for conducting seedling tests to determine the effectiveness of inoculations of preinoculated legume seed are outlined in _____.
    a. AOSA Vigor Testing Handbook
    b. AOSA Handbook 30
    c. AOSA Rules Volume 2
    d. AOSA ROA Handbook

Section 9

Methods for conducting seedling tests to determine the effectiveness of inoculation of preinoculated legume seed are outlined in AOSA Handbook No. 30: Growth Performance Tests for Preinoculated Seed.

24. The two methods for moisture determination are:
    a. Electronic moisture balance; room air
    b. Air-oven; room air
    c. Manual moisture scale; air-oven
    d. Air-oven; electronic moisture balance

Section 11.2

Methods and standard procedures for measuring seed moisture content

One or more of the following methods shall be used when measuring seed moisture content for crop species. A summary of each method is listed below; however, for details on each method and for specific crops refer to AOSA Handbook No. 40: Seed Moisture Determination Principles and Procedures, AOSA 2018, and subsequent updates. Regardless of the method used, seed samples must be clean and protected from external sources of moisture other than their own moisture content (see Handbook 40 sections 4.1.2 and 4.2.2).

a. **The air-oven method.** – The air-oven method is a primary method of seed moisture

b. **Electronic moisture balance method.** - The electronic moisture balance method is a secondary method of seed moisture determination. The detailed procedure is described

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

25. Species with specific proven methods for mechanical seed counts in the AOSA Rules are (select all that apply):
    a. Soybean (*Glycine max*)
    b. Corn (*Zea mays*)
    c. Cotton (*Gossypium* spp.)
    d. Wheat (*Triticum aestivum*)
    e. Kale (*Brassica rapa* subsp. *rapa*)
    f. Field bean (*Phaseolus vulgaris*)

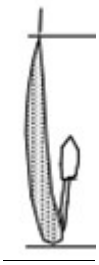
Section 12

> The following method shall be employed when using a mechanical seed counter to determine the number of seeds contained in a sample of soybean (*Glycine max*), corn (*Zea mays*), wheat (*Triticum aestivum*), and field bean (*Phaseolus vulgaris*) and other seed kinds. CAUTION:

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

For these questions, refer to the Canadian Methods and Procedures for Testing Seed.

26. Classify the following floret as a single or multiple unit according to the Canadian M&P:



a. Single
b. Multiple

27. Classify the following floret as a single or multiple unit according to the Canadian M&P:

a. Single
b. Multiple

28. Classify the following floret as a single or multiple unit according to the Canadian M&P:

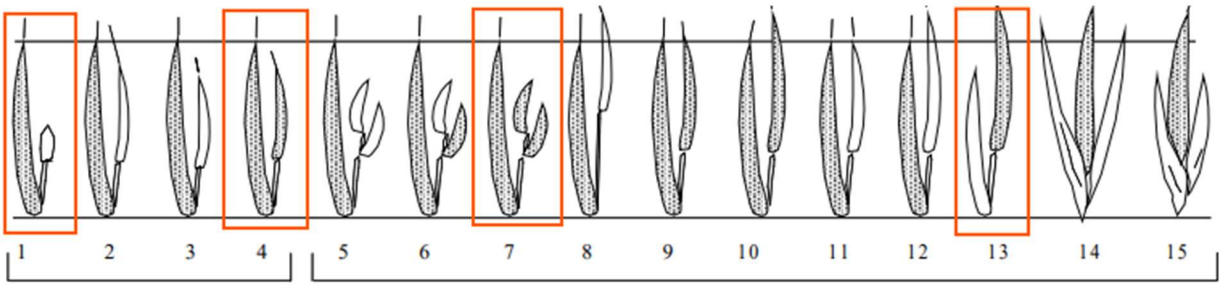
a. Single
b. Multiple

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

29. Classify the following floret as a single or multiple unit according to the Canadian M&P:

a. Single
b. Multiple

Section 3.2.1



30. In the Canadian M&P, if a purity sample is found to have a percentage by weight of a particular component (such as other crop seeds) that lies within the limits given in the appropriate table of checking limits, between which a check test is required for the grade line in questions, the sample is classified as:
    a. Passing
    b. Failing
    c. Graded
    d. On-the-line

Section 3.2.8

3.2.8 "On-the-line"

In the analysis of a sample of seed, the phrase "on the line" means that the number of foreign seeds of a particular category (such as primary noxious weed seeds), or the percentage by weight of a particular component (such as other crop seeds) found in the quantity analysed, lies within the limits given in the appropriate table of checking limits (Sections 3.5.3 and 3.6.3) between which a check test is required for the grade line in question. The "line" is the maximum number of foreign seeds of a particular category, or the maximum or minimum percentage of a particular component, permitted in any given grade by the Tables of Grade Standards, Schedule I, Seeds Regulations.

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

31. What is the minimum number of pure seeds that must be tested for germination?
    a. 600
    b. 200
    c. 400
    d. 800

Section 4.4.2 a.

Individual kinds of seeds: At least 200 pure seeds must be tested for germination. Four hundred seeds of any kind may be planted if considered desirable. The seeds must be tested in replicates of 100, 50, 25, or 10 seeds as appropriate.

32. What column of Table 1 does not apply to Grade Table XIV or XV?
    a. 3
    b. 7
    c. 6
    d. 5
    e. 4

Section 2.3.4

Note: Column 4 does not apply to Grade Table XIV or XV.

33. Results obtained on tests to determine percentage by weight of components or impurities (e.g. % pure seed, % inert, %ergot, etc.) must be given to how many decimal places?
    a. One
    b. Two
    c. Three
    d. Four

Section 3.9.1

3.9.1 Reporting results of percentage tests

a. Results obtained on tests to determine percentage by weight of components or impurities (e.g. % pure seed, % inert, % ergot, etc.) must be given to one decimal place and must total 100.0%. If the sum of the percentages does not equal 100.0% (either 99.9 or 100.1) then add or subtract 0.1% from the largest value (normally the pure seed fraction).

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

34. On a germ test, these counts should be conducted if continued growth of seedlings would hamper evaluation at the final count.
    a. First counts
    b. Early counts
    c. Intermediate counts
    d. Extension counts

Section 4.9.1 b.

b. Intermediate counts. These may be made at the discretion of the analyst after the seedlings have reached a sufficient stage of growth for all essential structures to be evaluated. Intermediate counts should be conducted if continued growth of seedlings would hamper evaluation at the final count.

35. A phytotoxicity test must be conducted to compare substratum of unknown quality with one in stock of acceptable quality. What species, according to the M&P, are known to be sensitive to toxic substances in substratum and should be used for this test? (select all that apply)
    a. *Cichorium intybus*
    b. *Allium porrum*
    c. *Phleum pratense*
    d. *Festuca rubra*
    e. *Anthyllis vulneraria*
    f. *Lactuca sativa*
    g. *Agrostis gigantea*
    h. *Phaseolus vulgaris*

Section 4.5.6

A phytotoxicity test must be conducted to compare a substratum of unknown quality with one in stock of acceptable quality. For this test, seeds of certain species which are known to be sensitive to toxic substances in the substratum are used: *Agrostis gigantea, Allium cepa, Apium graveolens, Cichorium intybus, Hordeum vulgare, Festuca rubra, Lepidium sativum* and *Phleum pratense*. At least two species must be included in the test. The seed is to be of a known quality with high germination.

2025-2026 Proficiency Test #2
Federal Seed Act, Canadian M&P, AOSA Rules
Deadline: Friday, February 27, 2026

The following is a survey question brought to AOSA/SCST by discussions at the AASCO meeting. This question is optional and will not be scored on the Proficiency Test.

- When performing an All-States/Federal Noxious Weed Seed Exam, if seeds of species listed on a state's "Restricted/Regulated" list of the *State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act* is found to be present, but in a quantity less than the threshold listed, does your lab state the presence on your Report of Analysis?
  a. Yes
  b. No
  c. Lab does not perform All-States/Federal Noxious Weed Seed Exam.

- If yes, please share the verbiage used on your Report for this instance.

- Other comments on this topic?