

RST Quiz 22  
LAST QUIZ!!

Name \_\_\_\_\_

**Short Answer**

1) Why is it important to test seed?

2) Name five (5) organizations devoted specifically to seed testing:

a)

b)

c)

d)

e)

3) What is a working sample?

4) What is a submitted sample?

5) Why are seed lots not uniform?

6) Describe the conditions necessary for a retest:

7) How do you calculate % germination under the following scenarios::

a) Single germ test 400 seeds

b) When more than 1 test is made

c) Paired tests

8) How do you obtain a germination sample, when only germination is required and the pure seed portion is less than 98% pure:

9) What are tolerances?

10) How should they be used?

11) How and when should they NOT be used?

12) Define regular tolerance:

13) Define special tolerance:

14) What is chaffy seed?

15) What is the ultimate purpose for seed testing?

16) Seed testing information can be used for a variety of reasons, such as providing information for planting purposes. Name 3 other uses for seed testing information.

17) How do you secure a representative sample?

18) How many bags would you sample if a lot contained

a) 5 bags

b) 10 bags

c) 15 bags

d) 100 bags

e) 1000 bags

19) Describe the two ways in which a submitted sample may be divided into a working sample:

20) How do you obtain a working sample for kinds not listed in Table I?

21) How do you obtain a working sample for samples believed to be unusually small seeded or large seeded for the seed to be tested?

22) What are the four components of a purity separation?

## **True or False**

- 1) Vegetable seed packets do not require a listed percent germination but must meet minimum germination requirements
- 2) The legume is a fertilized mature ovary
- 3) The seed analyst is usually responsible for probing the sample.
- 4) For non-free flowing seed, a probe long enough to sample all portions should be used.
- 5) Unless the trier has partitions in the seed chamber, it must be inserted in the bag vertically.
- 6) Only one working sample is required for purity and noxious weed examinations.
- 7) The pure seed shall include all seeds of each kind and/or cultivar under consideration which are present in 10% of the whole.
- 8) Raw seed is considered any seed that is free from applied materials.
- 9) Seeds that have started to germinate are considered pure seed.
- 10) All perennial ryegrass varieties would be considered non-fluorescent and annual ryegrass varieties would be considered to be 100% fluorescent unless described differently.
- 11) When testing a variety of perennial ryegrass, if the TFL is equal to or more than the level described by the variety, do not apply the fluorescence formula.
- 12) Larger seeds will require more water during germination than small seeds.
- 13) The uptake of water is regulated by the pericarp and the embryo.
- 14) In general, the distance between seeds should be less than 1.5 to 5 times the width or diameter of the seed.
- 15) Anytime a seed is infected with fungi or bacteria, it is considered abnormal.
- 16) The chilling period is included in the germination periods given in the Tables in the Rules.
- 17) The number of days stated for the first count is absolute and no deviation is permitted
- 18) The germination test must end at the end of the prescribed period and can not be extended under penalty of law.
- 19) When both purity and germination tests are required, seed for germination can be taken from any component.
- 20) When obtaining seed for the germination test, only take the seeds that are whole and are not diseased infected.
- 21) At present, in order to determine if seed is genetically pure, a certification agency employs inspectors to make field observations of the morphological characteristics of crops grown for seed.

- 22) The phenol, fluorescence and HCL are three test that can be used on oats.
- 23) The KOH test can be used on peanuts to distinguish cultivars.
- 24) After staining, white sweetclover will be dark brown or black.
- 25) The HCL test on oat seed is useful when the results of the fluorescence test are in doubt.
- 26) With the HCL test, oats that stain tan are also classified as fluorescent.
- 27) In the phenol test, the phenol solution reacts directly with the seed to produce the coloration.
- 28) When conducting a growth chamber test for anthocyanin coloration of coleoptiles, the germination media should be soil.
- 29) Cooler temperatures usually encourage anthocyanin development.
- 30) AOSA Rules require a fluorescence test to be made on all ryegrass purity tests (evaluations) in which the percentage(s) of perennial and/or annual ryegrass are reported.
- 31) Red and white cultivars of wheat can be distinguished using the NaOH test.
- 32) Seed characteristics, such as hilum color, seed shape, presence or absence of awns can be use to distinguish cultivars.
- 33) Fluorescence is a dominant characteristic and expressed its self when present.

## Calculations

1)	Component Label	First Analysis	Second Analysis	Difference	Average	Tolerance
	Corn	99.00	98.75			
	Other crop seed	0.25	0.50			
	Inert matter	0.50	0.55			
	Weed seed	0.25	0.20			

2)	Component Label	First Analysis	Second Analysis	Difference	Average	Tolerance
	Alfalfa	98.00	98.50			
	Other crop seed	1.00	0.50			
	Inert matter	0.50	0.25			
	Weed seed	0.50	0.25			

3)	Component Label	First Analysis	Second Analysis	Difference	Average	Tolerance
	Soybeans	99.25	98.00			
	Other crop seed	0.50	1.00			
	Inert matter	0.25	0.10			
	Weed seed	0.00	0.90			

4) Determine whether or not the following germination's are out of tolerance:

	Labeled	Analysis	# of Seed tested	Tolerance
a)	99	91	200	
b)	99	91	400	
c)	93	99	400	

5) Multiple unit calculation for Festuca rubra:

Purity analysis results:

<u>Components</u>	<u>Weight (gr)</u>	<u>Weight</u>	<u>Percentages</u>
Single units	2.825		
Multiple units	0.150		
Other crop	0.010		
Inert matter	0.010		
Weed seed	0.005		

6) Give the formulas for the following:

a) % Test Fluorescence (%TFL)

b) % Perennial Ryegrass

7) Calculate the VFL for the following perennial ryegrass blend:

Label: Variety A perennial ryegrass 45.16%  
Variety B perennial ryegrass 51.34%

Total perennial ryegrass on the label =

Variety A is not on the description list

Variety B is described as 3.20% fluorescence

VFL% to be inserted in the formula =

8) Calculate the % perennial and annual ryegrass with the following information:

Fluorescence test = 2.24%

Variety fluorescence perennial not described

Pure Ryegrass = 97.75%



## 9) Germination Results

# of Seed Tested	Test1	Test2	Difference	Ave.	Tolerance	In/Out Tolerance
400	87	92				
400	92	89				
400	82	85				
200	89	93				
200	98	92				

10) In alfalfa, calculate whether or no the number of dodder seeds is within tolerance:

Labeled seeds/lb	Analysis	Seeds/50 gr	Tolerance	In/Out Tolerance
15	3			
10	3			
0	1			
2	1			

11) Calculate the % annual ryegrass

Label - -      Variety A Perennial ryegrass 59.63%  
                   Variety B Perennial ryegrass 39.37  
                   Total perennial ryegrass label is 99.00%  
                   Variety A is not included in the description list  
                   Variety B is described a 2.50% fluorescent

12) Calculate the % annual ryegrass

Test fluorescence = 1.70%

Variety Fluorescence not described

Pure ryegrass = 98.45%

13) Calculate the % perennial and annual ryegrass with the following information:

Fluorescence test = 2.24%

Variety fluorescence perennial, 1.75%

Pure Ryegrass = 97.75%

14) Calculate the % perennial and annual ryegrass with the following information:

Fluorescence test = 2.24%

Variety fluorescence perennial, 2.34%

Pure Ryegrass = 97.75%

15) Calculate the % perennial and annual ryegrass with the following information:

Fluorescence test = 95.50%

Variety fluorescence annual, 100.00%

Pure Ryegrass = 97.75%

16) Calculate the % perennial and annual ryegrass with the following information:

Fluorescence test = 95.50%

Variety fluorescence annual, 85.50%

Pure Ryegrass = 97.75%

17) Calculate the % perennial and annual ryegrass with the following information:

Fluorescence test = 90.50%

Variety fluorescence annual, 95.50%

Pure Ryegrass = 97.75%