

20/20 Tech Bulletin

What are the 3 Critical Seed Tests?

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Germination testing is an integral part of a seed quality regime and is vital for assessing seed viability.

Beyond germination, 20/20 Seed Labs Inc. considers the 3 critical seed tests to be vigour, thousand kernel weight, and a disease diagnostic profile.

Why are these 3 tests critical?

These 3 tests, in conjunction with the germination test, will give growers a complete seed profile.

- **Vigour Test** - The vigour test is a stress test developed to determine the seed’s field emergence potential. The vigour result will be lower than the germination and will be indicative of seedling establishment when field conditions are less than optimal.
- **Disease Diagnostic Profile** - Seed health is very important and is often overlooked; disease testing assesses seed borne diseases that may be present on the seed. Knowing what pathogens are present gives you the information needed to make an educated decision regarding seed treatment options.
- **1000 TKW** - The thousand kernel weight is a measure of seed size (in grams) and is used when calculating seeding rates.

These tests provide crucial information choosing seed, setting optimal seeding rate and form the basis for uniform seedling establishment to establish an even plant stand. These factors also have a large influence on nutrient utilization, herbicide application, and crop maturity.

How can these “3 Critical Seed Tests” increase profitability?

The germination, vigour, and thousand kernel weight test results can be entered in a seeding rate calculator to determine the appropriate seeding rate. The results from these tests with a seeding rate calculator are a very accurate indicator of how many planted seeds will develop into healthy seedlings. Use the [seeding calculator](#) posted on Alberta Agriculture website.

Please note that the emergence mortality rate can be estimated by subtracting the vigour from the germination.

Example: if the vigour is 80% and germination is 95% use the difference (15%) as your emergence mortality rate.

The Fungal Screen™ for cereals and the **Complete Disease Diagnostic™** for pulses assess the seed for seed borne diseases. This valuable assessment of seed borne diseases can determine:

1. If the seed is highly infected with one or more diseases and should be replaced.
2. If the seed has diseases that can be controlled with a registered seed treatment.
3. Knowing what seed borne diseases are present allows the grower to choose a seed treatment option that provides the greatest control. (20/20 Seed Labs Inc. can help understand the seed treatment options available to determine which seed treatment is best.)



Knowing the quality of your seed gives you the ability to:

- Determine the optimal seeding rate.
- Have the desired crop density and uniform plant stand.

A crop that is uniform in growth and density will:

1. Provide a proper canopy to assist with weed control.
2. Reduce the chances of crop disease issues.
3. Better utilize crop nutrient inputs.
4. Enable producers to use fewer herbicide and fungicide applications.
5. Mature evenly.
6. Have less immature seed which improves storage and longevity.



Growers can better utilize crop inputs to help reach yield targets by planting tested seed.

How do I get “The 3 Critical Seed Tests”?

These tests can be performed on any cereal or pulse seed samples. Contact us at support@2020seedlabs.ca to submit samples or to get more details on seed testing.

HOW TO TAKE A SEED SAMPLE

- 1 Pass the sampler tool through the entire stream.
- 2 Sample at regular intervals.
- 3 Mix all primary samples together.
- 4 Fill your sample bag with the composite seed sample.

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Nisku, AB | Winnipeg, MB

Toll Free: 1-877-420-2099 Fax: 1-888-900-1810

www.2020seedlabs.ca