

Testing Small-Grain Germination

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Growers of small grain crops normally calibrate planting equipment to achieve specific plant populations per acre, even though the germination percentage of the planted seed is often unknown. Certified small grain seed is warranted to have at least a 90 percent germination rate (80 percent for rye); nevertheless, it is a good idea to do a specific germination test on seed to be planted. There is no question that the germination should be checked on seed that is not certified or seed that is carried over from a previous year.

Official tests require a minimum of 8 replications of 50 seeds each and are conducted over 7 to 10 days, depending on the grain being tested. The test can be extended 2 days for grain types that are slow to germinate. Growers can do a simple germination test at home. The procedure below does not pre-chill or pre-dry the seed as required for official seed certification standards, but provides some basic guidance on germination testing for the purpose of adjusting planting rate to achieve desired plant stands.

Simple at-home germination test

- Collect a **representative** sample of seed.
- Lay a paper towel out flat and, using a spray bottle, thoroughly moisten the paper towel, but not to the extent that water is running off it. If the towel is too wet, the seed may mold.
- Without culling any damaged seed, place randomly selected seed on the moistened paper towel. Placing a specific number of seeds on the

towel or placing the seeds in a specific pattern (like rows) will aid in the calculation of germination percentage.

- Place a second paper towel on top of the towel with the seed and moisten it as before.
- Roll up the towels containing the seeds, place the rolled up cylinder into a resealable zip-top bag, and seal it. If the bag is not properly sealed, the seed may dry out.
- Store the bag at room temperature: 7 days for barley or 10 days for oats or rye.
- After the required storage time, carefully unroll the paper towels and remove the top towel.



23 of 25 barley seeds germinating after 7 days
[(23/25)*100 = 92% germination]

- Count the seeds that have shoots longer than 1½ inches and at least one strong root. These represent viable seeds in the germination rate.
- Divide the viable seeds by the total number of seeds and multiply by 100 to determine the germination percentage.

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