

# TESTING FOR SEED VIABILITY



## Why test?

- Helps determine quality of seed
- Helps determine quantities of seed to sow to get the numbers of plants you desire
- Advisable for seed older than two years
- Seed lots with low viability may have other less desirable traits if grown for future plant growing

## What is viable seed with good germinability\*?

- Viable seeds have a healthy embryo under the seed coat waiting to be “woken up” and ready to grow
- Seed with good germinability are easily woken up and prepared for germinating easily under its preferred germination conditions
- \*You may think we made that word up, but it’s the proper term!

## Methods for testing

### **Consider these before starting:**

- Inspect the seed lot and compare collection date with potential expiry date (the *Seed Savers Handbook* has a list at the back of it)
- Keep actively growing seed to ensure it remains viable
- Good storage and cleaning in the first place really helps ie: store in vermin proof box in a dark space and, as much as possible, where there are only small temperature fluctuations
- Squeeze test – squeeze the seed to see if it appears full and firm
- Cut test – cut open seed and look for a lovely filled seed with a white embryo that doesn’t appear shrivelled or damaged

## Germination test

- Use paper towel (or fabric) and a soft plastic bag
- Select seed to test (select a number that can be sacrificed which will depend on how much seed there is) and work with numbers that can be easily converted to a percentage
- Place seed onto paper towel and moisten slightly
- Roll up the towel and place into a plastic bag - keep this open to air
- Place in a location that has the temperature similar to what is required to start germination (try the top of the fridge or a living area for constant warmth in cooler weather)
- Inspect after a week to count what has germinated then complete the test after about two weeks
- If the test failed (no germination), check if you have closely replicated preferred conditions
- Record your results (eg 8 out of 10 seeds germinated = 80% viability)

## Using soil

- As above however you can do this in real conditions in the soil or potting medium

## Important considerations

- Amount of seed to test would ideally be a minimum of 25 seeds but will depend on seeds available
- Seeds should be selected randomly
- Keep good records
- Testing becomes important if seed is older than two years; is to be shared; and/or if you are not sure of viability

## Seed viability and germination test in pictures



Random selection of seeds



Are they full and firm?



Look for the embryo inside

You can do a cut test on larger seeds, but smaller ones (like lettuce or broccoli) will probably be too difficult.

### Germination test

Set up:



1. Layout seeds along edge of moistened paper towel or fabric

2. Roll towel to enclose seeds

3. Place towel inside plastic bag. Leave the bag open (airflow is important).  
Locate for optimum conditions. Check in a few days to a week for signs of germination. Record your results.

## Pumpkin seed germination test

One winter's evening the seeds were prepared, as in the previous pictures.

The bag of seeds was placed in the warmest part of the house, where the heating was being used both during some of the day and evening (but not overnight).

I checked on them **two days later** ... and three seeds had made a move; with tiny shoots breaking through their seed covers.



The **next day**, 6 of the 8 test seeds had germinated.

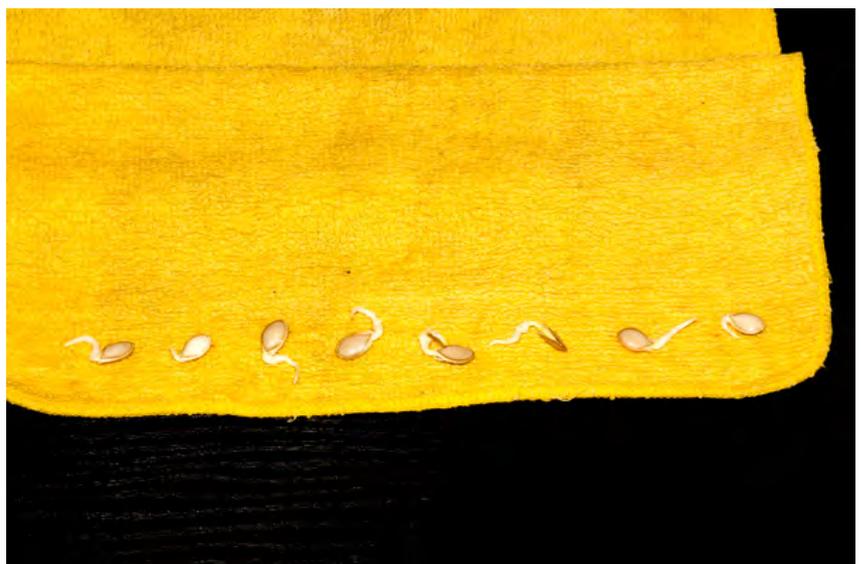


And by the **following morning**, the final two seeds joined the germination party.

Woo hoo! 100% germination of these pumpkin seeds. This seed lot is looking good for the coming spring.

Note that these were quite warm conditions, and for the purposes of demonstration, I used seed that I knew was fresh.

In sub-optimal conditions, with less viable seed, and depending on the type of seed you are testing, you may need to wait longer for germination. If the seeds don't germinate with a few weeks, they will likely rot.



You could also try doing your germination test closer to the time of year that the particular seed is usually sown. Remember, you are seeking to replicate its ideal germination conditions.