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By Sharon Rempel

Seed Selection

Many of the heritage varieties of wheat are available in small quantity. If you get a sample from the gene bank you'll get five grams. So you'll spend a few years growing out the seed, hand harvesting and threshing.

But wheat pays high returns to the investor and quantity grows quickly.

When you bulk up seed, it is best to not do any selection the first few years. Just watch the crop, rouge out any obvious oddballs (you might like to save these and grow them out to see what happens) and learn what the variety is like in your field.

Eventually the pressure to start selecting 'the best' variety is too great and that's what 'on farm' selection is about. However, if you are maintaining a variety, as I do, in a 'gene bank' setting, then it is important not to select but to maintain a very diverse genetic population.

In a village in Bangladesh, each farmer would select the best seed for his or her seed for the coming season. They would then bulk together the remaining seed in a pot. The next growing season they would select from the community seed a handful to grow out, separately from their selected seed. Same variety, same seed? Who knows, but they were maintaining the broad genetic diversity, allowing random crossing to happen in the field and also selecting seed that did well in their own growing field.

Hans Larsson in Sweden tells me that the colors within the wheat and straw are a language that we should learn and it will help us understand how unique each variety is, and its special characteristics.

When I worked in the Gene Bank in Greece we learned how to 'characterize' wheat. We measured various physical parts of the wheat and there are lists of internationally recognized classification characteristics available through IPGRI or the Canadian Gene Bank in Saskatoon.

The physical characteristics can change year to year as well as protein content and yield. Keeping a record book is a wonderful way to note the changes in a variety over time.

In the 'on farm research guide' posted on this site you'll find a really quick way of evaluating a variety as a group based on how it looks in the field; visit page 4 and page 7.

Saving Seed and Seed Longevity

Three criteria determine how long a seed remains viable. Temperature, humidity and light. Ideally seed is kept in the dark, in a cool dry place away from anything that might eat it. There are many charts in books that tell you the average lifespan of a seed, but it is generalized to crop type, such as lettuce or wheat and there is a great deal of variability.

Testing the seed's germination rate is easy. Take 100 seeds (if you have a lot if not then a few), put into a wet paper towel, slip into a plastic bag (open ended) and leave in a dark place until the seeds germinate. Count the number that have germinated and use the old math ratios to determine your percentage of germination.

This doesn't necessarily tell you the vitality in the seed sample. That's difficult to measure physiologically. A shriveled tiny seed may produce a very strong plant. A very fat strong looking seed may dampen off with a fungus after germination. Generally the healthier the seed, the stronger the baby plant. When it doubt, plant the seed and see if you will be able to get another generation of seed from the sample.

Wheat seed can freeze in the field and still germinate. Keep the seed purity high and remove all weed seeds from the sample. There will always be some seed that doesn't come clear from the chaff and that seed might germinate without problems. When you have small quantities of seed save everything until you can afford to be more selective with the seed.

Storing Seed

Paper bags are great but rubber bands and paper deteriorate over time. Be careful handling older samples.

I have most of my collection in the freezer because the collection isn't opened every year. A working collection (used annually) doesn't need to be frozen. I have my doubts if the seed appreciates freezing and as I age, living in the harsh cold of the prairies appeals less and less to me. Does this happen to wheat seed as it ages? Who knows.

Plastic is known to give off compounds that interfere with human hormones and I have to assume can't be great for other living organisms either. In a society full of plastic it is difficult to avoid it but avoid it if you can.

Keeping the seed free of insect pests may be a challenge. In many parts of the world there are simple solutions like dipping the seed in cow urine, or dung or putting a Neem leaf in the seed. Reading some books on seed saving from other countries will give you ideas. Experiment. Share ideas with other seed savers.