

Producing Certified Seed

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Producing certified seed is a good way to add value to crops and profits to the farm operation. Producing certified seed requires additional planning, labor, equipment, care, weed control, and seed conditioning. When done properly, the profits of producing certified seed will outweigh the increased costs.

What is Certified Seed?

Certified seed is seed of a known variety produced under strict seed certification standards to maintain varietal purity. Seed lots must also meet specified standards for other crops, inert matter, weed seeds, and germination. Certified seed is also free of prohibited noxious weed seeds. All certified seed must pass field inspection, be conditioned by an approved seed conditioning plant, and then be sampled and pass laboratory testing before it can be sold as certified seed.

Classes of Certified Seed

There are four classes (generations) of certified seed. In order of genetic purity they are breeder, foundation, registered and certified seed.

Breeder seed is directly controlled by the originating plant breeder, sponsoring institution or firm which supplies the initial source and recurring increases of foundation seed. There are no certification standards for breeder seed.

Foundation seed is produced from breeder's seed or foundation seed produced under the control of the originator or sponsoring institution or licensee. Foundation seed is controlled by the originating plant owner or licensee.

Registered seed is produced from foundation or other approved seed stocks. This class of seed shall be of a quality suitable for the production of certified seed. This seed is usually, but not always, one generation from foundation seed.

Certified seed is produced from foundation, registered, certified, or other approved seed stocks. This seed is two generations from foundation seed. Certified seed can not be used to produce certified seed again without the approval of the state certification agency, which can approve production only under extreme conditions.

Some "Must Do" Practices in Producing Certified Seed

Planning

- First time certified seed producers should visit with their local county extension agent, certified seed conditioning plant manager, state seed certification agency or other certified seed producers for suggestions.
- Obtain a copy of your state's Seed Certification Standards from a local county extension agent or the state seed certification agency. All requirements and standards of certified seed production are in this standards publication.
- If possible, select a field for certified seed production the preceding year. This allows time to reduce weeds, volunteer crops or other potential problems. Choose a field free of noxious weeds and infestations of other weeds. If this is not

possible, use fall-applied herbicides to control weeds such as Canada thistle, field bindweed, and perennial sow thistle. Field bindweed plants that are setting seed and leafy spurge are not allowed in seed fields.

- Do not plant a seed crop on land seeded to the same crop the previous year, unless the field is planted to the same kind and variety of crop and passed field inspection the previous year.
- Study NDSU test plot results and talk to local elevators, seed suppliers or your local extension agent to choose the certified seed variety to produce. Newer varieties are generally easier to market.
- In some cases the variety you pick may require special contracts. Be sure you know this ahead of time.
- When planning to plant foundation seed, order seed well in advance. The seed stock program may have limited amounts of seed for sale. Registered class seed is usually available from producers of registered seed or approved seed conditioning plants.

Seed Purchasing

- Keep extra tags or a copy of your bulk certificate on file for each lot of seed purchased. You will need a tag or bulk certificate when you apply for field inspection application and one for a backup.
- Keep a sample of seed for at least a year to document quality of seed planted.
- Carefully examine samples of seed to be sure the seed is not contaminated with other crop or weed seeds.
- Bulk seed must be hauled, conveyed and stored in a manner that prevents contamination.
- Use clean storage facilities.

Planting

- Carefully select fields for producing certified seed. Fields that were seeded with cover crops can be a source of contamination.
- Use a high pressure air hose and a strong vacuum cleaner to clean seeding and other seed handling equipment.
- Establish isolation strips at time of planting if needed. Isolation strips are needed if planting next to an inseparable crop. See your Seed Certification Standards for isolation details for each crop.
- Check everything added to the field for contamination. Make sure bulk fertilizer and granular herbicides mixes do not become sources of contamination.
- Disk opener drills and air drills have many places for seed to go undetected; be sure that all other seed is cleaned out.

Before Field Inspection

- Complete and mail field inspection application forms, along with field inspection fee and tag or bulk certificate, to the state seed certification agency before application deadlines. Generally there are different deadlines for early and late seeded crops. Check with your certification agency or county extension office for field inspection application deadlines.
- Application forms can be obtained from your local extension office or state seed certification agency. If you miss the **deadline date** it is still possible to have fields inspected prior to harvest, but late charges will be assessed.
- Control problem weeds before field inspection. Control means that the weeds will not set seed before harvest. Field bindweed is the greatest challenge to keep from setting seed by harvest. Have prohibited noxious weeds under control.
- Rogue (this means removed from field; not just pulled and thrown on the ground) undesirable plants (examples: barley in HRSW or durum in barley) from the field. Correct problems before the inspector arrives.
- If possible, walk the field with the field inspector. Inspectors are a good source of information on weed identification, diseases and other problems you might encounter.
- Contact your field inspector, the state seed certification agency or your local county extension agent when you have a question or problems that require correcting.
- Make sure your fields are inspected and pass before harvest.

Harvest

- Use an air hose with good pressure and a vacuum cleaner to clean harvest and storage equipment. If while inspecting any part of the combine, trucks or bins you can tell what was harvested, hauled or stored in them previously, then you haven't done a good enough job of cleaning.
- Combines and handling equipment must be carefully cleaned. Grain hangs up on braces, augers, etc. Be prepared to shut down for three to four hours or more for proper cleaning.
- Some certified seed growers have modified their combines with trap doors at strategic locations (clean grain auger, unloading auger, etc) to save time during cleaning.
- Even after thorough cleaning many certified seed producers will take the first harvested round from a certified field and haul the grain to their elevator to be sold as grain, not seed. This may reduce the risk of contaminating seed.
- Growers who have contamination (i.e. a mixture of other crops or varieties) along the ends or sides of a field should

not mix it with seed to be certified. Clean the combine thoroughly before harvesting seed acres or delay harvest of contaminated areas until the clean area is harvested for certified grain.

Seed Conditioning

Remember that having your field approved does not mean you have successfully grown certified seed. Several more steps remain in the process:

- Locate an approved seed conditioning plant. Not all seed conditioning plants are approved to condition certified seed.
- Find out if the plant has the equipment to handle and condition your kind of seed properly. Also check out the general housekeeping of the plant. This will give a good indication of how well the seed conditioning operation is managed.
- Keep samples of seed before conditioning. A good representative sample of the seed lot can help all parties answer the questions about contamination should that problem occur.
- Be sure you have clean storage for seed after conditioning. After certified seed is conditioned, it will most likely have to be taken back to the farm or some other warehouse for storage. Most conditioning plants do not have adequate on site storage to store growers seed after conditioning.
- Keep samples of each conditioned lot of seed. A good representative sample of the conditioned seed lot can help all parties answer any problems in the lot of seed, such as germination, purity and other types of contamination.
- Tags must be attached to bags of certified, registered or foundation seed. A bulk certificate must accompany each load of certified seed sold in bulk.

Work with the seed conditioning plant manager; some of the items needed from the grower are:

- Field inspection report, listing any kinds of weeds in the field and any admixtures (i.e., barley in wheat) that were noted during field inspection.
- Review a sample of unconditioned seed with the conditioning plant manager.
- Cost of conditioning seed — at most seed conditioning plants it costs more to have certified seed conditioned than common seed. Reasons for these charges are conditioning certified seed involves more labor keeping mills and handling equipment clean to avoid contamination; it also requires more sampling and record keeping.

Marketing Your Seed

- If you are going to sell seed from the farm, don't forget advertising and other costs.
- If you are contracting with a seed plant, work with the plant before planting the crop. Agree on variety and approximate number of bushels to be delivered.
- Select a fall date to lock in on price, typically \$.50 to \$.75 premium on net bushels. This will depend on supply and demand.
- Sell a quality product. It takes years to build a good reputation for quality, but it takes only one bad lot to ruin years of hard work.
- Payment for seed. There is a cost involved in selling seed. Most producers you sell to are honest, but be prepared for bad checks and other payment problems.

Costs Involved in Growing Certified Seed

- Cost of transport to conditioning plant, back to the farm and delivery to final buyer.
- Marketing fees.
- Field inspection fee.
- Conditioning seed at a certified plant.
- Final certification fees which include:
 - seed testing.
 - tag or certificate fee.
 - bulk lot fee.
 - bushel fee.
- Seed levy may be assessed if growing seed for the local Crop/Agricultural Improvement Association.
- Research fees.
- Seed labeling fee. Labeling fee permit is required to sell seed.

Equipment Needed

- A good strong vacuum cleaner.
- A portable air compressor that can sustain good pressure.
- Grain holding tanks.
- Farm scale for weighing bulk seed.

Other Sources of Information on Certified Seed

- [NDSU Extension Circular A-520, North Dakota Seed Increase Program](#)
- [NDSU Extension Circular A-500, Selecting Quality Seed of Cereal Grains](#)
- State Seed Department Bulletin 92, North Dakota Field Inspected Seeds
- State Seed Department Bulletin 51, North Dakota Seed Certification Standards
- State Seed Department Bulletin 73, State Seed Laws

The Plant Variety Protection Act

- The US Plant Variety Protection Act (PVP) was enacted in 1970 giving plant breeders the right to protect their non-hybrid varieties. This protection ensures that breeders benefit from their development and enables them to recover research costs while making new varieties of crops available to the public.
- At the time of application for protection, the owner of a new variety has the option of requiring that the variety be sold only as a class of certified seed. Title V of the Federal Seed Act (FSA) makes it unlawful to sell uncertified seed of a protected variety that must be certified.
- This enables the collection of royalties for new varieties by the person or company who developed them, prohibits the unauthorized sale of protected varieties of seed, requires that protected varieties be sold by variety name, and provides a protection period of 18 to 20 years for most crops.
- The PVP gives the owner of a protected variety the right to seek damages up to three times the amount of the royalty lost plus court cost against any person or firm who sells or participates in the sale of a protected variety without authorization. In addition, PVP gives the owner the right to seek damages on a crop produced from unlawfully obtained seed of a protected variety.
- The PVP was amended by congress in 1994. Those changes took effect on April 4, 1995. Both the old and the newly amended PVP gives a farmer the right to save seed of a crop produced from a protected variety. There are differences in the law:
 1. If protected before April 4, 1995, a farmer can either sell or plant the amount saved as long as an advertisement, public notice or other third party is not used to make the sale; amount saved is defined as the amount that a farmer could use on production acres. Example: If a farmer has total of 400 farm acres and plants 2 bushels/acre, then up to 800 bushels of wheat could be either planted or sold as seed. Any more than that number would be a violation of the law. Saved seed can not be sold by variety name. The right to sell saved seed only applies if the producer originally purchased the variety as certified seed.
 2. If protected on or after April 4, 1995, farmers cannot sell the saved seed but they can use it for planting purposes on their farm.
- A buyer cannot divert to planting purposes grain of a protected variety purchased as food or feed or commercial grain.
- The PVP only affects seed that is intended for reproductive purposes.
- The North Dakota State Seed Department Regulatory Division is responsible for enforcement of the North Dakota Seed Law.
- PVP seed will have the PVP Symbol and the words US Protected Variety Unauthorized Propagation Prohibited on the label. For those varieties protected under the newly amended PVP, special labeling will identify them as being subject to the new PVP.

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