



Saskatchewan Forage Council

Forage Seed Quality

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There are those who believe that as long as the seed is cheap and it grows, it is good enough for forage production. This attitude can be dangerous and often leads to some serious and costly mistakes that result in the spread of undesirable weedy species. Certified seed is the minimum grade standard that will guarantee the genetic purity of the seed and ensure the forage stand produced will reflect the attributes for the variety in question.

The current Seeds Act and Regulations were put in place to protect consumers, plant breeders and the industry. Pedigreed seed is a guarantee the seed lot in question is high quality, genetically pure seed and will reflect the attributes of the variety. Pedigreed standing of a seed lot is a guarantee of quality by the Canadian Seed Growers Association and the Canadian Food Inspection Agency of Canada.

The Seed Section of the Canadian Food Inspection Agency (CFIA) is responsible for the administration of the Seeds Act and Regulations to help ensure that seeds sold in, imported into and exported from Canada meet established standards for quality, including varietal purity and germination. It also ensures appropriate labelling so they are properly represented in the marketplace, and in the case of most agricultural crop varieties, are registered prior to sale in Canada. The Agency is designed to provide Canadians with access to high-quality seed products as well as facilitate both its domestic and international movement. The Canada Seeds Act applies to all growers, wholesalers and retailers, who import, export or sell seed. The Act governs the regulations respecting the quality of all seeds including seed potatoes, and the inspection and sale of this seed (Canadian Food Inspection Agency, Web page January, 2002).

The Seeds Act and the Weed Seeds Order, 1986, regulate the kinds and numbers of weed seeds, debris and other crop kinds that can be present within a pedigreed seed lot. Grade tables were developed for each class of pedigree seed and crop kind. The objectives of the Act and Order is to reduce and prevent the spread of weed seeds throughout the country in the case of domestic use and to prevent the transfer of exotic weed seeds during the import/export process. The standard is zero for prohibited and primary noxious weeds in all the pedigreed classes for forage crops, except Common #2. There is some tolerance for secondary noxious weeds in pedigreed seed.

In addition, there are limits placed on the total number of weed seeds that are permitted for each seed class. The Weed Seeds Order, 1986, classifies weed seeds as either noxious, primary noxious or secondary noxious weeds. One of the problems of the Order is having some weed species listed as noxious that perhaps should not be listed and other weed species not listed at all. A good example would be downy brome (*Bromus tectorum*), which is becoming more of a problem in Saskatchewan and spreading farther north each year. Currently downy brome is not listed in the Weed Seeds Order, 1986; however, steps are being taken to have this weed species listed in the Weed Seeds Order. □

The purchaser of the forage seed should be aware of weed seeds listed in this Order, which weeds are already present on their farm, and which species to avoid introducing onto their land. Producers have the right to view the Seed Testing Certificate for any seed lot before purchasing the seed. The Seed Testing Certificate will identify the kind of weed seeds present and number of weed seeds found in the sample. The official seed seals or tags should also be reviewed before the seed is purchased. This information should be used as part of your guide to purchase (or not) a particular seed lot.

Producers who wish to become pedigree seed growers must make application to the CSGA for membership to the organization. There are strict rules and regulations set out in the Pedigreed Forage Seed Production Manual distributed by the CSGA. Forage seed producers must ensure all fields designated for forage seed production are inspected before the crop is swathed and/or harvested. There are regulations that guide the field inspector, so the seed producer must be aware of these regulations if he/she is going to be a successful pedigreed seed producer.

When a seed lot is brought into a seed cleaning plant, a sample is analyzed to determine the number and kinds of weed seeds present, presence of straw, sticks, seeds of other crop kinds, etc. The goal for most seed cleaning plants is to clean above the standards set out in the regulations to ensure the quality of the seed produced and enhance the reputation of their seed operation. It is very costly for the seed cleaning plant, as well as the seed grower, to have to clean a seed lot more than once.

Once a seed lot has been cleaned, a representative seed sample is collected and sent to an accredited seed-testing laboratory. The certificate of seed analysis indicates the kinds and number of weed seeds present (noxious, primary, secondary and other), other crop species, percentage pure seed, other crop seeds, weed seeds, inert material, germination percentage, as well as the percentage hard seeds. If a seed lot does not make grade, it can be re-cleaned to remove the weed seeds or other impurities that are preventing it from meeting a pedigreed grade standard. Alternatively, the seed lot may be demoted to a lower level within the grading system. The lowest level within the pedigreed system is Certified #2. If the seed lot does not make this grade, it is demoted to Common and cannot be sold under a variety name without contravening the Seeds Act.

Once the seed has been cleaned, graded and bagged, the seed lot is sealed using an official seed sealing tag. The seed seals indicate the class of pedigreed seed, crop kind, variety, grade and class obtained by the Seeds Act, crop certificate number, percent germination, date tested and seed sealing number (seed lot number). These seals must not be removed from the bags until the seed is placed in the seeding equipment at seeding time. This is particularly important if the seed is Breeder or Foundation pedigreed that a person wishes to use to establish a pedigreed seed production field. Any open bags must be resealed by an authorized person; proof must be documented that the seed lot was not contaminated as a result of being opened. □

The regulations indicate how long a forage seed field can be used for pedigreed seed production. Forage seed has three seed classes, Breeder seed, Foundation, and Certified. Unlike many annual species, there is no registered seed classification for perennial forage crops. There is a limit on the number of years that seed can be collected on a pedigreed seed stand and still obtain pedigreed seed standing. The number of years a seed stand is eligible for pedigreed standing in each class depends on the class of seed used to establish the stand. Regulating the number of years helps maintain the genetic purity of the seed produced. This not only protects the seed trade industry, but also ensures the seed lot is genetically pure and worthy to be sold using the variety name. As the forage seed stand ages, weeds begin to encroach on the stand and it becomes increasingly more difficult for the seed producers to guarantee the purity of the seed produced. In addition, plants in the original population may die off, seed may shatter and germinate. These plants are now in a forage seed stand that was established by Breeder or Foundation seed. As a result, these plants no longer represent the grade standard set out in the regulations governing the Seed Act for pedigreed seed production and cannot be guaranteed to represent the genetic purity of the variety in question. As time passes, the CSGA and CFIA have less confidence the seed being produced represents the genetic purity of the designated variety. Hence the restriction on age of stand and restrictions on number of years a seed field can generate pedigreed seed.

There are several criteria a producer should consider when deciding what seed to purchase. One of the most important criterion is to know the pedigree of the seed in question. Common seed has no guarantee of genetic purity. Seed lots in this class are often made up of a number of varieties any one of which may or may not be adapted to environment conditions in Canada, Saskatchewan and/or your region. The only stipulation for this class of seed is that it has to be graded. Any person who knows how to test seed, according to the Canadian Methods and Procedures for testing seed, can apply a Common grade without actually having an accredited lab perform the testing. Pedigreed seed must be tested by an accredited lab. Any person or company making claims of genetic purity for this class is contravening the Seeds Act and can be subject to all the penalties set out in the regulation. To sell Common seed by variety name, and/or to make claims as to its genetic origin is also contrary to the Seeds Act. This is a Federal offence.

Almost anyone can import and sell seed as Common seed. The seller does not have to disclose where the seed was produced, whether or not the variety has been tested and registered within Canada or whether it is adapted to our growing conditions. The only way to guarantee genetic purity of a seed lot is by the classification of pedigreed seed by the CSGA.

Once that classification has been completed the lot will bear the official seal of that designation. The only way to ensure you are not purchasing inferior forage seed is if the seed has been tested by an accredited seed lab which determines the seed meets the regulations set out in the Canada Seed Act. Common seed will always be cheaper to purchase than Certified seed. This stands to reason since anyone can produce it and the only requirement is that the seed be graded as either Common number one or two.

In order to avoid purchasing inferior quality seed, remember, pedigreed seeds growers have to follow the strict regulations set out in the Canada Seeds Act. Common seed does not have to meet any standard for varietal purity and is therefore by this very nature of vastly inferior quality. A prudent forage producer will not be prepared to compromise genetic purity for short-term gains. Remember, saving a few dollars today can be extremely costly in terms of longevity of a forage stand and the forage quality produced from the forage stand. A forage stand has the potential to withstand many years of grazing and hay production provided seed quality is not compromised at the onset. Check the seed certificate and pay attention to the date the seed was tested for germination; if it has been longer than 6 to 8 months then request a new germination test. Most reputable forage seed producers will do this automatically. Check the pure live seed (% germ x % pure seed). Expect a discount if below 85%. Purchase quality seed based on the pedigree of the seed and for best results never purchase seed that cannot be positively identified by variety name.

The seed standards and regulations set out in the Canada Seeds Act are a compromise between what many of us would like to see in an ideal world and the realities we face in our lives. They are a compromise between the need to prevent the spread of unwanted weeds and making the cost of the pedigreed seed prohibitive. Pedigreed seed is the best we have and the most realistic means to ensure you are getting what you want and need for your farming operation.

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