



**1 Variety Development**  
In labs and fields, Plant Breeders develop new seed varieties with new traits and improved yields. Certified seed sales help develop new varieties.



**2 Parent Seed Multiplication**  
Most Breeder seed is produced in small amounts and CSGA seed growers multiply this seed.



**3 Field Selection**  
Seed growers carefully select fields which meet strict previous land use requirements of CSGA.



**4 Planting Equipment Sanitation**  
During planting, seed growers protect quality by investing extra time cleaning machinery and planters to remove seed of other varieties, difficult-to-separate weeds or other crop kinds.



**5 Isolation**  
Certified seed production fields are carefully isolated from other crops to prevent contamination from other varieties or crop kinds.



**6 Roguing**  
Seed growers inspect their crops throughout the growing season and remove off-types, other varieties, problem weeds and other crop kinds that have emerged during the season.



**7 Field Inspection**  
Seed crops are inspected at a specific stage of maturity during the growing season by third-party inspectors licensed by the Canadian Food Inspection Agency (CFIA).



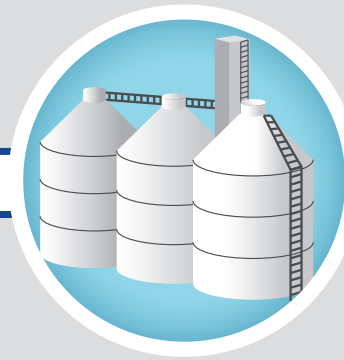
**8 Certification**  
After passing the field inspection and meeting all CSGA standards, the seed grower receives an official crop certificate.



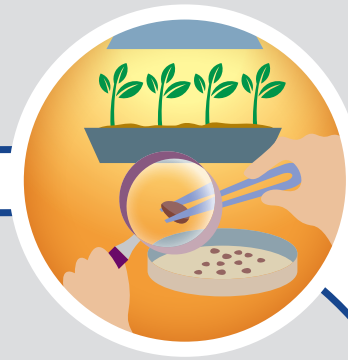
**9 Harvesting Equipment Sanitation**  
Before and during harvest, seed growers protect quality by investing extra time cleaning their harvesting, transfer and storage equipment.



**10 Harvesting**  
At the proper stage of maturity, the seed crop is harvested by the seed grower.



**11 Separate Seed Storage**  
To preserve varietal purity and provide a traceability record, Certified seed requires separate storage bins to preserve unique genetic identities.



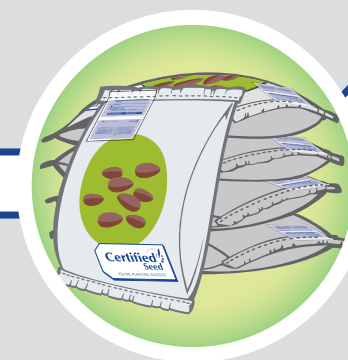
**12 Testing and Grading**  
Federal Seeds Regulations require CFIA-accredited graders to verify that pedigreed seed is tested by CFIA-accredited labs for compliance with standards for germination and physical purity.



**13 Bagging and Tagging**  
Certified seed is packaged and labeled by variety name with an official blue Certified seed tag.



**14 Commercial Farmer**  
Certified seed is planted by commercial farmers to produce their large commercial crops of grains and oilseeds.



**15 Food Processor**  
Food processors who demand grains and oilseeds grown from Certified seed get the assurance of starting with identity-verified ingredient characteristics to ensure consistent, high quality, premium products.

# How is Certified Seed Produced?



## 1 Variety Development

In laboratories and fields, Plant Breeders work diligently for many years to develop new seed varieties with improved genetics. For farmers, this means improved yields due to better lodging resistance, drought tolerance or insect and disease resistance. For food processors, this relates to innovative characteristics. A portion of the Certified seed sales is reinvested in research to develop new and innovative seed varieties.

## 2 Parent Seed Multiplication

Breeder seed is usually produced in small amounts, so CSGA seed growers multiply the seed. Accredited CSGA plot growers choose a seed variety to produce in their elite parent seed plots. They reproduce this small amount of seed in accordance with rigorous production certification standards that ensure varietal purity and freedom from impurities. Their Select or Foundation class seed provides the parent seed for other seed growers to produce Registered and Certified class seed crops.

Breeder & Select Plots > Foundation & Registered Seed > Certified Seed > Commercial Grains & Oilseeds

The investment in additional production time means Certified seed growers are committed to producing a proven, quality product.

## 3 Field Selection

Seed growers carefully select the field in which to produce their crop. Seed growers are required to follow stringent CSGA regulations for previous land use to prevent contamination from other varieties and difficult-to-separate weeds or other crop kinds in their Certified seed crops.

## 4 Planting Equipment Sanitation

During planting, seed growers protect quality by investing extra time cleaning machinery to ensure no seed of other varieties, difficult-to-separate weeds or other crop kinds are mixed with the seed. When growers change varieties, the entire planter is cleaned to remove all seed of the previous variety.

## 5 Isolation

Certified seed production fields are carefully isolated from other crops to prevent contamination from other varieties or difficult-to-separate other crop kinds. Seed crop kinds with different types of pollination risks have different isolation requirements. The isolation distance required by CSGA also varies depending on the crop kind in the neighboring field.

## 6 Roguing

To preserve the purity of Certified seed crops, seed growers inspect their crops throughout the growing season and remove other varieties, off-types, weeds and other crop kinds that have emerged during the season.

## 7 Field Inspection

Seed crops are inspected at a specific stage of maturity during the growing season by third-party inspectors licensed by the Canadian Food Inspection Agency (CFIA). Inspectors verify isolation distances, previous land use history and parent seed identity. They also complete representative counts throughout the seed field to report impurities such as off-types and other varieties and difficult-to-separate weeds and other crop kinds.

## 8 Certification

After crop inspection, the inspection report is appraised by the Canadian Seed Growers' Association (CSGA). The CSGA assures the crop has been produced in compliance with its standards. After passing field inspection and meeting CSGA standards, the seed grower receives the official crop certificate that is required for CFIA-Registered Seed Establishments to label seed with official blue Certified tags.

## 9 Harvesting Equipment Sanitation

Before and during harvest, seed growers protect quality by investing extra time cleaning their harvesting equipment. This prevents common seed, weed or other crop seeds getting mixed with the Certified seed at harvest. When seed growers change fields to harvest a different variety, the entire combine is cleaned to remove all seed of the previous variety harvested.

## 10 Harvesting

At the proper stage of maturity, the Certified seed crop is harvested by the seed grower.

## 11 Separate Seed Storage

To preserve varietal purity and provide a traceability record from where the seed was grown all the way to the consumer's table, Certified seed is the first link of an identity preserved (IP) system chain which requires a separate storage bin and records for each variety to preserve its unique genetic identity.

## 12 Testing and Grading

Federal Seeds Regulations require pedigreed seed sold in Canada to be tested for compliance with official grade standards for germination and physical purity by CFIA-accredited labs and graders and labeled by CFIA-registered seed establishments. The federal standards for germination and physical purity of Certified seed are much higher than common grade seed, which assures a higher quality product. Federal Seeds Regulations prohibit common grade seed from being sold by variety name. Common grade seed is from a crop which has not been certified by the CSGA.

## 13 Bagging and Tagging

After receiving the official CSGA crop certificate and a certificate of analysis from a CFIA-accredited lab, which verifies compliance with seed germination and physical purity standards in federal Seeds Regulations, Certified seed is packaged and labeled by variety name with an official blue Certified seed tag by a CFIA-registered seed establishment. Only then is the seed designated as Certified seed; only then can agricultural field crop seed be sold by variety name.

## 14 Commercial Farmer

Certified seed is sold to commercial farmers to plant their large commercial crops of grain and oilseeds. Commercial farmers are choosing Certified seed of a specific variety to get the latest innovation, increased yields, improved disease and lodging resistance. Many commercial farmers work closely with food processors to deliver specific varieties of grains and oilseeds under an identity preservation programs.

## 15 Food Processor

Food processors who demand grains and oilseeds grown from Certified seed get the assurance of starting with identity-verified ingredient characteristics to ensure consistent, high quality, premium products. They also get documented traceability of their food products right back to the field where the Certified seed was produced. Certified seed is the foundation of quality foods and a promise they can market specific varietal characteristics to today's health conscious and food savvy consumers. Ask for grains and oilseeds grown from Certified seed from your grain handler, miller, crusher, ingredient supplier or food manufacturer.

