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## Canadian Seed Certification System: Post-Crop Certificate Environmental Scan

### Introduction

The Canadian seed industry is extremely important to the Canadian agriculture and agri-food value chain. To help maintain the integrity and quality of the Canadian seed industry a Seed Certification system is used. The purpose of the Canadian certification system is to provide high value seed to consumers by maintaining the varietal identity and purity and to ensure high standards of; germination, mechanical purity and seed health as seed stocks are increased through specific, limited number of generations.

To facilitate this high quality standard, seed undergoes a rigorous certification process. There are many steps that have to be taken and quality documents that must be followed. The following focuses on the steps and processes that occur after a crop certificate has been issued by the Canadian Seed Growers' Association (CSGA) and the crop has been harvested and is ready for transport.

### Steps in the Production of Certified Seed

For seed to be certified in Canada it must follow detailed steps and processes before it finally receives an official tag and is certified.

Steps:

1. Planting of eligible seed stocks
2. Application to CSGA
3. Crop Inspection by CFIA (now transitioning to private inspections through Alternative Service Delivery beginning in 2014)
4. **Seed Crop Certificate issued by CSGA**
5. **Processing at Registered Seed Establishment**
6. **Sampling**
7. **Testing**
8. **Grading**
9. **Labelling**
10. **Certified Seed**

Industry accreditations programs enable sampling, testing, grading and labelling to be completed by the private sector under official supervision. According to CSI, in 2012-2013 they expect their seed program client base to include:

- 81 Authorized Importers
- 570 Approved Conditioners
- 840 Bulk Storage Facilities
- 980 Graders
- 1585 Licensed Operators
- 33 Seed Laboratories

CSI clients currently range from British Columbia on the West Coast to Prince Edward Island on the East Coast.

## Post Harvest

Once a field has been planted, an application has been made to the CSGA, the field has been inspected by CFIA and it has been determined to be of sufficient varietal purity and the varietal identity has been maintained, then a crop certificate is issued by the CSGA and the crop is harvested.

However this is not the end of the road, there are still several other requirements that the seed itself has to meet, such as; mechanical purity, germination and freedom from seed borne diseases before it can be classified as Certified Seed.

## Transportation

The HACCP QMS model identifies shipping or transport as a “Critical Operations Procedure” and recommends quality control records for addressing the risks to seed purity during transport. The goal is to prevent commingling of the harvested crop with other unintended varieties. There are documented, third party audited or monitored sanitation procedures for all shipping containers, handling or transfer equipment and vehicles.

CSI’s *Seed Program Quality Standard* details the handling of seed during transportation. Seed handling, storage, packaging, preservation and delivery requirements include:

- A system shall be established and maintained for importation, conditioning, preserving, segregating and handling seed lots from the time of receipt to the time of release to prevent misuse, abuse, damage, deterioration or loss.
- Packaging material must be clean and sound and the contents of the packages must be clearly identified.
- Equipment used to handle, condition, move or store seed must be cleaned in order to prevent contamination.

For delivery of transportation of conditioned, grade seed:

- The registered seed establishment must have a system in place that maintains the identity, integrity and purity of all graded pedigreed seed handled by the establishment.
- An official tag or bulk pedigreed seed certificate must accompany all cleaned, graded seed when seed is moved from one registered seed establishment to another establishment i.e. another approved conditioner, bulk storage facility or wholesale/retail outlet.

## Registered Seed Establishments

After a crop certificate is issued by CSGA, the next step is for the seed to be sent to a Registered Seed Establishment (RSE) to be processed. RSEs are seed industry facilities that are authorized under *Part IV of the Seeds Regulations* and range in size and scale from seed grower/facilities that process and sell their own seed to local market to large seed companies that have multiple facilities and operate in multiple provinces across Canada. There are three types of RSEs in Canada:

1. **Approved Conditioner:** Facilities that process seed by cleaning, treating, mixing, blending or bagging pedigreed seed.
2. **Bulk Storage Facility:** Facilities that store and sell graded pedigreed seed in large bulk containers. (Most Approved Conditioners are also Bulk Storage Facilities).

3. **Authorized Importers:** Facilities that can import seed with minimum documentation, but are responsible for assuring that all Canadian requirements for imported seed are met before seed is sold and distributed.

RSEs are distributed across the agricultural regions of Canada, mostly concentrated in the prairies, Ontario and Quebec with a others operating in the Atlantic Provinces and British Columbia. CFIA has the power to suspend or cancel a RSEs license if they are found to be non-compliant.

Licensed Operators:

Every RSE must have a Licensed Operator on staff who is responsible for ensuring compliance for all seed-related activities including; processing, sampling, labelling, testing, grading, maintenance of records, retaining representative samples and declaring and accounting for all pedigreed seed handled by the RSE. Licensed Operators are assessed and recommended by the Canadian Seed Institute (CSI) but licensed by CFIA.

### **Sampling and Testing**

Once the seed has been processed by an RSE and is in the state it will be sold in, it then has to be sampled and tested so that the mechanical purity and germination of the seed can be determined. The sampling is done by a CFIA Approved Sampler (usually at the RSE) and the testing is done by seed laboratories that are also accredited by CFIA.

The CSI is the Conformity Verification Body (accredited by CFIA) that is responsible for the recommendation for annual renewal of labs that have successfully completed an audit in the current or preceding calendar year and successfully participated in check sample programs approved by CFIA. CFIA is responsible for the initial audit of new seeds labs and the accreditation of seed labs and seed analysts.

There are a set of Recognized Standard Methods for the testing of seed in Canada which is used in private accredited labs to provide the test results required to grade a seed lot in accordance with the Grade Tables. The Grade Tables are maintained by the Science Branch of CFIA and are amended annually. Accredited labs then issue a Seed Analysis Certificate, the results of which are used to help grade the seed and prepare it for sale.

### **Grading**

Accredited Graders determine and/or assign a Canada grade name based on an analysis of a representative sample and the standards established in the *Seeds Regulations*. They are also responsible for the application of the official tags.

Accredited Graders are evaluated by CFIA and/or CSI to ensure that they are able to perform grading activities in an effective manner and have the necessary competency and knowledge. Most graders work in RSEs, but there is still some independent graders.

### **Labelling**

Labelling is done by the RSE under the authorization of CFIA and using an audited Quality Management System. In Canada labelling requirements must be clear and legible in either English or French. The label must not contain any misleading information regarding place of production or any brand name or mark that may be construed as the name of the variety.

All units of measurement required to be shown on a label must be in the units of the International System of Units. Seed cannot be labelled with a grade name unless it has been properly graded and tested. Every package of seed of a kind or species set out in *Schedule I* must also include the following on its label; name and number of noxious weed seeds per unit weight, name and number of other weed seeds per unit weight, name and number of seeds of other crop kinds per unit weight, percentage of germination and the date on which the test was completed etc.

### **Certification**

Seed is considered to be pedigreed or certified once it receives an official tag, often from an Accredited Grader at an RSE. Official tag types include; White Tag for Foundation Seed, Purple Tag for Registered Seed and Blue Tag for Certified Seed.

The completion of the certification process through the aforementioned industry accreditation programs, with official oversight, ensures that the seed is prepared for export or marketing within Canada.

Prior to sale, all certified seed must be; processed by an approved conditioner, sampled by an approved sampler, examined for purity by a grader or seed analyst, tested for germination by an officially recognized lab, graded by an accredited grader, and labeled according to the *Seeds Regulations*.

### **Post-Crop Certificate Process**

1. Processed by an Approved Conditioner
2. Sampled by an Approved Seed Sampler
3. Tested for Germination by an Accredited Seed Lab
4. Examined for Purity by a Grade in a RSE or a Seed Analyst in an Accredited Seed Lab
5. Graded by an Accredited Grader
6. Labelled according to the Seeds Regulations