



Guide to Treated Seed Stewardship

Best Practises for the Safe Handling, Storage,
Transportation, Use and Disposal
of Treated Seed

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Disclaimer

This Guide to Treated Seed Stewardship is intended solely as an educational tool and as general guidance to assist product users to voluntarily develop and implement stewardship practices related to the use of treated seed. This Guide is intended to serve as a reference document only. Entities may choose to refer to the entire Guide or specific sections of the Guide as appropriate.

The guidance is intended to be flexible and its application will differ according to the products involved and the size, nature and complexity of the organization using the guidance. This Guide is representative and not exhaustive.

It is the responsibility of any user of this document to consider that user's specific circumstances in:

- 1. developing a stewardship plan specific to its business; and*
- 2. meeting any applicable legal and regulatory requirements.*

This Guide is not intended and should not be construed, as legal advice or a substitute for a user's own individual understanding of applicable legal requirements.

Regulatory requirements may be issued or revised by government agencies after the publication date of this Guide. Users are advised to consult with their legal counsel and/or contact the appropriate regulatory agency or agencies to ensure compliance with applicable requirements.

The Guide does not define or create legal rights or obligations, and the Canadian Seed Trade Association (CSTA) and the Canadian Seed Growers' Association (CSGA) specifically disclaim any such rights or obligations. CSTA, CSGA and their respective members do not make any warranties or representations, either expressed or implied, with respect to the accuracy or completeness of the information contained in this Guide; nor do they assume any liability of any kind whatsoever resulting from the use of or reliance upon any information, procedures, conclusions or opinions contained in this Guide.

Guide to Treated Seed Stewardship

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I. Introduction

Many of the things that enhance our quality of life including: an abundant supply of safe and healthy food; cleaner fuels and industrial products; greener spaces; and a healthy agricultural economy have something in common – they started with the planting of a seed. Seed is a compact delivery system for technologies and innovation that contribute to competitiveness and productivity for the Canadian agriculture and agri-food system, while enhancing the environment.

In addition to delivering genetics and advanced traits for productivity and end use attributes, seed also may carry its own protection from disease, insects and weeds. Modern seed treatments are an effective tool for combating the negative impacts of these pests at the time of planting, helping farmers to produce higher quality crops while minimizing the impact to humans, animals and the environment. Other technology carried in and on seed includes growth enhancements, fertilizers and coatings to ensure that seed treatments stay on the seed.

The Canadian Seed Trade Association and the Canadian Seed Growers' Association, in keeping with our sector's commitment to stewardship of seed and the technology carried by seed both inside and out, have developed this guide to treated seed stewardship. It is designed to serve as an educational tool and to provide general guidance for those involved in the handling, storage, transport, and use of treated seed. While these best management practises are voluntary, the industry strongly recommends that those who are working with treated seed incorporate them into their individual stewardship plans.

This guide was developed to specifically recommend best practises for insecticide and fungicide treated seed. However, the practises suggested in this guide may also be helpful for those making operational decisions on the stewardship of seed enhanced with biologicals, inoculants, fertilizers and/or functional seed coatings (polymers).

We hope that the Guide to Treated Seed Stewardship will assist users to develop and implement their own stewardship programs to comply with federal and provincial regulations, and to maintain an operationally and environmentally sound operation.

This guide focuses only on treated seed (seed post treatment). It does not apply to seed treatments, or the act of treating seed, either commercially or on the farm. It is meant to be a complement to the CropLife Canada-developed Agrichemical Warehousing Standards Association (AWSA) [Accredited Seed Treatment Operations Standards](#), which provide uniform health and safety practises for the storage, handling and application of designated seed treatment products in Canada.

II. Safe Handling, Storage and Transport of Treated Seed

A. Treated Seed Storage Facilities

Location

- i) **New Construction** – the facility should be located at least 25 metres from the nearest property line, and at least 30 metres from rivers, lakes, streams and/or environmentally sensitive areas.
- ii) **Existing Facilities/Adding to Existing Facilities** – facilities that are located closer than 25 metres from the nearest property line should have the local fire department or municipality review the location of the facility in relation to surrounding properties for compliance with local regulations.

Facilities located less than 30 metres from environmentally sensitive areas should practise frequent operational clean-up procedures and have a plan for containing emergency response water including an evaluation of dyking requirements.

Design and Construction

General

- i) **Access to Facility** – ensure access to facility is restricted to authorized personnel only. Signs should be posted at entrances.
- ii) **Emergency Access** – at least two sides of the facility should have ten metre free zones to allow for access by emergency response vehicles.
- iii) **Security** – the facility should be secured by lockable doors and windows.
- iv) **Access to Emergency Equipment** – areas/aisles etc. where emergency equipment is located should be kept clear at all times to facilitate access.
- v) **Lighting** – lighting should ensure that information on labels can be easily read.
- vi) **Fire Detection and Extinguishers** – a monitored fire detection system should be considered for all storage areas. Fire Extinguishers should be located in accordance with relevant Building Code requirements.
- vii) **Exits** – exits should be located in accordance with Building Code¹ requirements. Emergency exits should be clearly marked and posted with exit signs. Access aisles, halls etc. to emergency exits should be kept clear at all times.
- viii) **Damaged or Contaminated Products** – a separate area should be designated and clearly identified for the storage of damaged and/or contaminated products.

B. Facility Operation

General

- i) **Isolation/Segregation** – All treated seed should be kept isolated from food, food products, livestock feed and equipment used for food/feed processing and handling. Ensure that lunchrooms, washrooms and offices are separated from treated seed storage areas. Eating and smoking should be prohibited in storage areas.

¹ Building codes are based on the National Building Code of Canada, which incorporates the National Fire Code. However codes do vary by some provinces. <http://www.canadabusiness.ca/eng/page/3941/>

ii) **Documentation Maintained** – it is recommended that all treated seed facilities maintain the following documentation:

- Regulatory Information (Transport Dangerous Goods, Workplace Hazardous Materials Information System (WHMIS))
- Standard Operating Procedures of the facility
- Required Licences and Permits
- Inventory Records
- Employee Training Records
- Inspection Records
- Emergency Response Plans
- Material Safety Data Sheets
- Emergency contact information (e.g. poison control, veterinarian)

Safety Plans and Equipment

- i) **Material Safety Data Sheets** – information on the safe handling, storage and use of treated seed and a product identifier (e.g., brand name, code name or the chemical name of the product) for each product in the facility must be readily accessible. Material safety data sheets should also be made available for all products in the facility.
- ii) **Safety Equipment** – dust masks, respirators, goggles, gloves and other appropriate safety equipment should be stored in a readily accessible and well marked location.
- iii) **Safety Inspections** – a documented annual safety inspection by the operator or safety officer is recommended for all storage facilities and equipment.
- iv) **Emergency Response Planning** – all facilities should develop a plan for responding to emergencies such as major spills or fires. The plan should be developed in conjunction with local emergency response officials.

The emergency response plan should be accessible to facility personnel, and should be in the possession of individuals listed in the plan and of local emergency response officials.

Facilities should review and practise the emergency response plan at least annually.

C. Storage of Treated Seed – in a commercial facility and on the farm

General

- i) **Location** – treated seed should be kept in a secure location out of the reach of children, livestock, wildlife and unauthorized personnel.
- ii) **Environment** – the storage area should be well ventilated, well lit and have adequate temperature control. Protect treated seed from direct sunlight and rain/snow.
- iii) **Safety** – treated seed should be kept separate from flammable products.

Bulk Seed

- i) **Bin Foundation and Surface** – bins should be anchored to a secure foundation. Areas under bins should be concrete or asphalt and have a smooth finish to allow for sweeping. If the areas under the bins do not have a smooth finish, an effective method of removing spills should be developed.
- ii) **Bin Construction** – bins should have hopper bottoms to allow for complete clean out. Bins should be lockable to prevent theft and/or vandalism.
- iii) **Load In/Load Out Pads** – a concrete or asphalt pad is recommended around areas where treated seed is loaded/unloaded to allow for clean-up of spilled product.

Bagged Seed

- i) **Stacking** – avoid unsafe (leaning/unstable) stacks. A minimum of 1 metre distance should be maintained between the top of stored product and overhead heating systems.
- ii) **Floor** – floors should be impervious, and should have a smooth finish with no floor drains. Drains can be present if they discharge to a separate containment system.
- iii) **Walls** – construction of walls of the storage area should meet appropriate fire and building code requirements.
- iv) **Separation** – treated seed storage area should be separated from seed treatment storage area
- v) **Heating System** – where seed is stored in a heated area, open flame heaters should not be used. Ceiling furnaces must meet fire and building code requirements.

D. Treated Seed Spills

- i) Spills of treated seed should be cleaned up immediately and thoroughly.
- ii) Scoop or sweep up material and place into a disposal container.
- iii) Spilled treated seed should be stored in a secure labelled container in a separate area until it can be disposed of in an approved manner. (*Refer to Disposal of Treated Seed, page 7*).

E. Employee/Personnel Training

- i) **Training courses** - It is recommended that personnel who are handling treated seed in a commercial facility be given appropriate training in the facility's standard operating procedures and other procedures including but not limited to:
 - Workplace Hazardous Materials Information System (WHMIS)
 - Occupational Health and Safety Rules
 - First Aid/CPR
 - Safety Equipment Use and Management
 - Fork-Lift Operation
 - Emergency Response Procedures
 - Transport Dangerous Goods Regulations and Requirements

F. Transporting Treated Seed

Proper safety precautions should be taken to prevent treated seed spills and losses of loads of treated seed into the environment.

- i) Drivers are responsible for ensuring that all loads are evenly balanced and properly secured against shifting, and that bulk seed is properly and securely covered.
- ii) All loads carried on a motor vehicle or trailer must be bound, properly covered and securely fastened to ensure that no portion of the load can fall off the vehicle or trailer.
- iii) Always thoroughly clean truck boxes, trailers and other handling systems that have been used to transport bulk treated seed.

III Treated Seed Tagging and Labelling

As prescribed in the *Seeds Act* and Regulations²:

- i) Any seed that is treated with a pest control product (as defined in the *Pest Control Products Act*) must be stained with a conspicuous colour to show that it has been treated. Canadian Grain Commission Colour Standards for pesticide seed treatments are: cereals—pink or red and canola—baby blue. Seed treated with an inoculant may have a green stain.
- ii) Seed that is treated with a pest control product must be identified with the appropriate signal word and symbol defined in the Pest Control Product Regulations to represent the nature and degree of risk,³ along with the following statement: “Do not use for food or feed. This seed has been treated with (insert the common or chemical name of the Pest Control Product).”

Refer to the seed treatment product label for specific information that is required on the seed tag. For example: as of 2015, the Pest Management Regulatory Agency of Health Canada requires additional labeling of corn and soybean seed that is treated with neonicotinoid insecticides: *clothianidin*, *thiamethoxam* and *imidacloprid*.

- iii) By the end of 2015, the Canadian Food Inspection Agency will be requiring that seed be labelled in both English and French.
- iv) Seed that is pre- inoculated with rhizobial inoculants must be labelled in accordance with *Fertilizers Regulations*. The label on the pre-inoculated seed must contain the following statement. "This product is treated with (species name or genus of the active microorganism) inoculum."

² http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._1400.pdf

³ See Appendix 1 for the table of symbols and signal words from the Pest Control Products Regulations

IV Planting Treated Seed

Always handle treated seed with the same care and attention as you take when handling other crop protection products. Read and follow the personal safety instructions on the label.

Taking the proper measures for planting treated seed is a key component of a comprehensive stewardship plan. Follow Best Management Practices to reduce potential exposure:

- i) **Environmental Stewardship** - Be aware of the presence of honeybee hives and crops and weeds in the flowering stage within or adjacent to the field that could attract pollinators.

Control flowering weeds in the field prior to planting to ensure that pollinators are not foraging.

Observe environmental conditions. Dry, windy conditions can carry dust onto flowering crops, weeds or trees.

Provide pollinator-friendly habitats away from active fields.

- ii) **Use of Seed Flow Lubricants** – Certain seed treatments and planting equipment require the use of specific seed flow lubricants.

For example, when planting corn or soybeans treated with a neonicotinoid insecticide using an air/vacuum planter/seeder, Health Canada's Pest Management Regulatory Agency (PMRA) requires that a dust-reducing agent be used. Talc and graphite are still not permitted to be used as a seed flow lubricant in these cases. Carefully follow the use directions provided with the dust-reducing fluency agent.

It should be noted that other lubricants may be used when corn/soybean planting is not done with a vacuum/air planter/seeder. As well, planting equipment (for use in other crops) may have specific recommendations on the type of seed flow lubricants to use to ensure optimal flowability and planter performance. Follow the recommendations of the planter manufacturer for the proper use of other lubricants.

- iii) **Avoid Dust Generation** – in addition to careful attention to weather conditions and locations of pollinators, take additional measures to reduce dust at planting.

Consider choosing seed coated with a finishing polymer to bind seed treatments to the seed, to further reduce dust.

Handle seed bags with care during transport, loading and unloading in order to reduce abrasion, dust generation and spillage.

Do not load or clean planting equipment near bee colonies or pollinator foraging areas.

Pour seeds carefully and do not shake dust or loose material from the bottom of the seed bag.

When turning on the planter, avoid engaging the system near bee colonies or foraging areas.

Use deflector equipment, where appropriate, to direct exhaust to ground level and reduce the off-field movement of seed dust. Consult with your equipment dealer or the manufacturer to determine whether deflectors are appropriate for your planter and, if so, to identify the appropriate deflector.

Clean and maintain planting equipment. Use a vacuum to remove seed and dust from the planter, including the fan housing and hopper. Do not use compressed air.

- iv) **Clean-up and Disposal** – spilled or exposed seeds and dust must be incorporated into the soil. Do not leave them exposed.

Keep treated seed and dust away from surface water.

Do not leave empty bags in the environment. Dispose of them in accordance with local regulations. Participate in CLEANfarms collection programs⁴ where available.

V. Disposal of Unused Treated Seed

Health Canada's PMRA uses a general statement on most treated seed labels: "For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency." For a summary of a search of provincial regulations see Appendix 2.

A. Small Quantities of Unused Treated Seed

- i) Return excess treated seed to its original seed lot containers if the seed is intended for storage and subsequent planting.
- ii) Plant in fallow or other non-cropped areas of the farm in accordance to the seed treatment product label.
- iii) Unless restricted by label language, excess treated seed may be double planted in the turn rows at the end of the field or within a portion of the field.

B. Off Farm Disposal of Seed Not Acceptable for Planting and/or Larger Quantities of Pesticide Treated Seed

- i) Large quantities of treated seed in sealed and undamaged packages/bags/totes, in many cases, may be returned by the grower to the supplier.
- ii) Consult with your provincial authorities to ensure your disposal plan is in compliance with all appropriate regulations.
- iii) Disposal facilities will be required to have a Ministry of the Environment (or similar) permit to accept pesticide treated material (such as treated seed). Whether a waste management facility, power plant, cement kiln, ethanol plant, or municipal landfill is permitted to dispose of seed treated with a particular pesticide can only be confirmed by contacting the facility.
- iv) Your seed supplier may also be aware of permitted disposal facilities in your area. Treated seed can be landfilled at a Class I or II landfill if it is classed as non-hazardous waste according to Provincial waste control regulations (see Appendix 2). If it is classed as hazardous waste by provincial regulations, check with provincial waste disposal regulations and agencies to determine if it can be disposed in a Class 1 landfill, and to determine locations of Class 1 landfills.
- v) There is zero tolerance for treated kernels in the commodity grain channel when the treated seed tag states the seed is not for food, feed, or oil purposes.

⁴ http://cleanfarms.ca/programs_pilot_seedbag

VI Preventing Contamination of Commercial Grain

Improper clean out of equipment used to handle bulk treated seed can lead to the contamination of commercial grain and oilseed deliveries, putting domestic and export grain and oilseed markets at risk. Those who deliver treated seed as part of commercial grain and oilseed deliveries are liable for all of the costs and losses by sector. Following are best management practises to help to prevent contamination of grain and oilseed shipments.

- i) **Equipment Selection** – Ideally separate equipment should be dedicated to handling of treated seed and not used for commercial deliveries of grain and oilseeds.

Where separate equipment is not possible, wagons and trucks used for handling bulk seed should be selected for how easily and thoroughly they can be cleaned. Equipment should have straight sides and bottoms with no racks or pinch points, and very few angles or cross braces.

- ii) **Bulk Seed Loading** – all equipment used to handle treated seed should be identified with a tag or label after use for treated seed. The tag or label should not be removed until the equipment has been properly cleaned out and inspected. Tags may be available from the manufacturer of the seed treatment.

- iii) **Equipment Clean-Out** – A clean-out procedure should be developed and staff should be trained on the procedure. It should include:

- Thoroughly sweep and or vacuum all surfaces and check all accessible areas for treated seed
- Disassemble all racks and tarps to locate any trapped seed
- In a location away from pollinators or pollinator habitat or forage, use compressed air to blow out tubing pipes or angle irons on equipment.
- After cleaning, pressure wash all surfaces and inspect when dry.
- Clean up and appropriately discard all treated seed, wash water and residues.
- If augers are used for both seed and grain and oilseed handling, they should be triple flushed immediately following planting with a quantity of untreated seed sufficient to fill the auger. The seed used as flush material should be planted.

- iv) **Documentation** – Keep accurate records identifying equipment used to handle treated seed, and when it was cleaned. Documents should also state how clean-out was performed, and when equipment was inspected and by whom.

- v) **Third Party Conveyances** – it is the responsibility of the shipper to ensure that third party conveyances are free of contamination. It is suggested that the operator be required to supply a document listing the last three products carried, and identifying the clean-out procedures.

VII Glossary of Terms

Active Ingredient: (from the *Pest Control Products Act*) “Active ingredient” means a component of a pest control product to which the intended effects of the product are attributed and includes a synergist but does not include a solvent, diluent, emulsifier or other component that is not primarily responsible for those effects.

Colorants: Products whose primary function is to impart coloration to seed treatments and in turn color to treated seed. Treated seed is colorized or otherwise adulterated in appearance to allow visual identification that it is treated so as to identify it as unfit for human consumption and to identify the possibility of other hazards associated with treated seed.

Commercial Application: The application of seed treatments to seed in commercial facilities (as opposed to application on-farm and in planters).

Drift: The physical movement of pesticide droplets or particles through the air from the target site to any non-target site (which could result in Off Target Exposure).

Dust – field: This refers to dust generated from the soil. Such dust may be picked up and dispersed in the air by the planting equipment during the planting process.

Dust – treated seed: Fine particulate matter contained in or easily dislodged from treated seed. It consists of both the naturally occurring Untreated Seed Dust as well as components of the Seed Treatment.

Dust drift: See Drift. Specifically, dust drift is drift of dusts such as Treated Seed Dust and Lubricant Dust.

Emergency Preparedness Plan: A documented, trained and implemented plan for actions to be taken in the event of anticipatable emergencies. Examples of emergencies include tornadoes, earthquakes and chemical spills.

Environment: (as defined by the Government of Canada) means components of the Earth and includes

- air, land and water,
- all layers of the atmosphere,
- all organic and inorganic matter and living organisms, and
- the interacting natural systems that include components referred to in paragraphs (a) to (c);

Exposure – Occupational: The physiological exposure of people working with seed treatments through contact with the Seed Treatment Products or Treated Seed. Skin contact and inhalation of dusts or mists are typically the most significant routes of exposure.

Flowability: See Seed Flow. The lack of resistance to flow for seed and treated seed through a system: generally through a seed conditioning or treating plant; or through a planter.

Fungicide: A specific type of pesticide that controls fungal disease by specifically inhibiting or killing the fungus causing the disease.

Handlers: “Handlers” can refer to Handlers of Seed Treatment Products” (e.g. loaders, mixers or Seed Treating Operators) or “Handlers of Treated Seed” (e.g. Baggers, sewers, stackers, planter operators). Personal protective equipment may be specified for individual or groups of “handlers”.

Handling: Handling includes the movement of products and treated seed, including but not limited to loading, unloading, weighing, bagging, sewing, stacking, and planter loading and operation.

Hazardous components: Components which present health, safety or environmental hazards.

Headland: A strip of land left unplowed at the end of a field.

Inoculant: Agricultural amendments that use beneficial endophytes (microbes) to promote plant health. Many of the microbes involved form symbiotic relationships with the target crops where both parties benefit.

Inoculation: The process of adding effective bacteria to the host plant **seed** before planting.

Label: (from the *Seeds Act*) includes any legend, word, mark, symbol or design applied or attached to, included in, belonging to or accompanying any seed or package

Lubricant: A material added to seed to aid in Seed Flow in a planter. Such products are added when the seed is loaded into the planter, or may be metered in during planting. Lubricants include powders, with talc and graphite being the most common. Other lubricants for use with certain crops and planting equipment to reduce the generation of seed dust during planting are available or are under development.

Manufacturer: The producers of products for application as Seed Applied Technologies and of equipment.

Material Safety Data Sheets (MSDS): A detailed informational document prepared by the manufacturer or importer of a hazardous chemical. It describes the physical and chemical properties of the product, and is a tool for communicating safe handling and environmental protection requirements.

Personal Protective Equipment (PPE): Equipment that is worn by employees to mitigate hazards of a process. For seed treating operations, PPE typically means to reduce exposure of operators to seed treatments and treated seed dust. Such PPE includes but is not limited to long-sleeved shirts; long pants; shoes; socks; goggles; chemical resistant gloves; and respirators.

Pesticide: Health Canada’s Pest Management Regulatory Agency defines a pesticide as follows: Any product, device, organism, substance or thing that is manufactured, represented, sold or used as a means for directly or indirectly controlling, preventing, destroying, mitigating, attracting or repelling any pest.

Planter Equipment: Equipment used to plant seed, of which there are many types. Examples include Box drills, mechanical meter planters, air seeders, and positive air pressure planters (with and without central commodity systems).

Pollinators: Organisms that carry pollen from one seed plant to another, which aids the plants in their reproduction. Common pollinators include insects, especially bees, some butterflies and birds.

Rhizobia - Soil bacteria that fix nitrogen after becoming established inside root nodules of legumes. Rhizobia require a plant host; they cannot independently fix nitrogen.

Seed Applied Technology: All materials applied to seed including any combination of Seed Treatment Products, Seed Treatment Polymers, Seed Treatment Colorants, inoculants, micronutrients, biologicals and other Seed Treatment Components.

Seeds Act and Regulations: Federal Legislation and associated regulations, administered by the Canadian Food Inspection Agency, that prescribe requirements to ensure that seeds sold in and imported into Canada meet established standards for quality, and are labelled in order to be properly represented in the marketplace.

Seed Flow: The uniformity and freedom of flow of seed through a system, generally through a seed conditioning or treating plant; or through a planter. Poor seed flow may be slow or inconsistent seed flow, or plugging of augers or conveyors or other handling equipment. Seed treatments may positively or negatively impact seed flow.

Seed Flow Lubricant: A material added to seed to aid in Seed Flow in a planter. Such products are added when the seed is loaded into the planter, or may be metered in during planting. Lubricants include powders, with talc and graphite being the most common. Other lubricants for use with certain crops and planting equipment to reduce the generation of seed dust during planting are available or are under development.

Seed Polymer: A finishing coating applied to treated seed to protect active ingredients and biologicals applied in the form of seed treatments from dusting off. This not only improves retention of seed treatment active ingredients on the seed but also reduces the seed applicator's or grower's exposure to various compounds.

Seed Treatment: Seed treatment is the application of biological organisms and chemical ingredients to seed to suppress, control, or repel plant pathogens, insects, or other pests that attack seeds, seedlings or plants. Seed applied technologies such as inoculants, herbicide safeners, micronutrients, plant growth regulators, seed coatings, colorants, etc. may also be applied to the seed. Treated seed is intended for planting only and not for food or feed uses.

Polymers: Products added to seed treatments whose primary function is to reduce dust of treated seed and to improve retention of seed treatment active ingredients on the seed

Transport: The movement of products or treated seed from one location to another in the commercial chain normally by trucks, boat or rail. It also includes movement of product within a plant or on a farm, such as by augering, conveying, or elevating through elevators.

Treated seed: Seed that has been treated with a "Seed Treatment Product".

Wastewater: Any water contaminated with Seed Treatment Products or other Seed Treatment Components, such as from washing equipment.

Waterways: Any pathway of water that is constantly moving.

VII Resources

Accredited Seed Treatment Operation Standards: CropLife Canada/Agrichemical Warehousing Standards Association

<http://awsa.ca/wp-content/uploads/2014/08/Seed-code-FINAL-August-5-2014.pdf>

A Guide to the Government of Canada's Labour Program

<http://www.labour.gc.ca/eng/resources/publications/index.shtml#hs>

Employer and Employee Duties under the Canada Labour Code Part II

http://www.labour.gc.ca/eng/health_safety/pubs_hs/duties.shtml

Health Canada Directive D94-06 - Colour Standards for Seed Treatment Products and Labelling of Treated Seed

http://www.hc-sc.gc.ca/cps-spc/alt_formats/pacrb-dgapcr/pdf/pubs/pest/pol-guide/dir/dir9406-eng.pdf

Labour Program Hazard Prevention Guide

http://www.labour.gc.ca/eng/health_safety/pubs_hs/prevention_guide.shtml

National Building Code of Canada

http://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2010_national_building_code.html

National Fire Code of Canada

http://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/2010_national_fire_code.html

Pest Control Products Act

<http://laws-lois.justice.gc.ca/eng/acts/P-9.01/page-1.html#h-2>

Provincial Environmental Protection Acts

See Appendix 2

Seeds Act

<http://laws-lois.justice.gc.ca/eng/acts/S-8/page-1.html#h-2>

Summary of the Canada Labour Code Part II

http://www.labour.gc.ca/eng/health_safety/pubs_hs/summary.shtml

The Employer and the Workplace Hazardous Materials Information System (WHMIS)

http://www.labour.gc.ca/eng/health_safety/prevention/employer.shtml

The Guide to Seed Treatment Stewardship: American Seed Trade Association

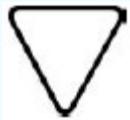
<http://seed-treatment-guide.com/about/overview/>

Appendix 1

SIGNAL WORDS AND PRECAUTIONARY SYMBOLS

For use on labels of seed treated with a Pest Control Product

The symbol must be placed inside the shape representing the level of caution

	Column 1	Column 2
Item	Signal Word	Precautionary Symbol
1.	Caution	
2.	Danger	
3.	Warning	
4.	Corrosive	
5.	Explosive	
6.	Flammable	
7.	Poison	

Appendix 2

Provincial Regulations for handling, storage and disposal of treated seed

Pesticide regulation is a somewhat shared activity between the Federal Government (Health) and the Provinces. The federal government assesses and approves products for sale, but the provinces can set regulations on those approved products for transportation, sale, use, storage and disposal.

The Pest Management Regulatory Agency (PMRA) of Health Canada uses a general statement on most treated seed labels: “For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency.”

A search of provincial regulations finds that the amount of regulation is widely variable between provinces. Some provinces (e.g. Alberta) clearly spell out how treated seed should be managed including disposal. Many appear to have no regulations or requirements at all.

Province	Act or Regulation	Text
British Columbia	Environmental Management Act: Agricultural Waste Control Regulations	Agricultural products such as livestock, poultry, farmed game, fur bearing animals, animal and poultry feeds, forage silage, forage crops, vegetables and chemical fertilizers must be managed, used and stored in a manner that prevents the escape of agricultural waste that causes pollution.
Alberta	Environmental Protection And Enhancement Act : Waste Control Regulation http://esrd.alberta.ca/lands-forests/land-industrial/programs-and-services/pesticide-management/pesticide-waste/documents/7287.pdf	Excess seed can be double-planted around field edges. Treated seed can also be planted on land designated for pasture or silage. It should be thoroughly incorporated at the time of seeding using a cultivation method such as harrowing Treated seed can be landfilled at a Class I or II landfill if it is non-hazardous waste according to the Alberta Waste Control Regulation (AR 192/96). Seed that is hazardous waste may be landfilled only at a Class I landfill (special landfill approved to receive solid hazardous waste). Seed that has been treated with fungicides only is classified non-hazardous in Alberta.

		Contact the landfill owner prior to delivering the seed to ensure that it will be accepted. If treated seed will be accepted, the landfill operator must be alerted at the time of disposal to ensure that treated seed is covered immediately to prevent any risk to wildlife. In the event the landfill operator is not willing to accept the waste, they should contact a broker at the Environmental Services Association of Alberta
Saskatchewan	Detailed product sheets are available in the Saskatchewan Guide to Crop Protection http://www.agriculture.gov.sk.ca/Default.aspx?DN=5be29ef9-e80c-4ebd-b41d-d8e508b5aaba The guide contains detailed product sheets for seed treatments. There are restrictions and requirements for treated seed at the end of many of the product sheets.	Any spilled or exposed seeds must be incorporated into the soil or otherwise cleaned up. Left over treated seed should be double sown around headlands or buried away from water sources
Manitoba	Also has a guide to crop protection, but it does not specify disposal requirements.	
Ontario	No regulations found	
Quebec	No regulations found	
New Brunswick Nova Scotia Prince Edward Island Newfoundland and Labrador	The four Atlantic Provinces cooperate in projects to train and license pesticide applicators. http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/LandWaste-TerreDechets/ApplicatorCoreTrainingManual.pdf However it does not set out rules or recommendations for handling or disposing of treated seed. Each province has its own legislation, but a search of all of the legislation and regulation only found one reference to treated seed. New Brunswick Pesticide Control Act and Regulations simply states that no person shall use, transport or dispose of pesticides (specific referral to treated seed) in contravention of the product label.	



Canadian Seed Growers Association

The Canadian Seed Growers' Association (CSGA) is a non-profit organization representing the interest of Canadian seed growers. We provide leadership as the only Canadian organization to monitor and certify pedigreed seed for all agricultural crops in Canada except potatoes. www.seedgrowers.ca



Canadian Seed Trade Association

Founded in 1923, the CSTA represents a broad cross-section of Canadian businesses that are engaged in all aspects of seed research, production and marketing, both domestically and internationally. Involved with more than 50 crop species, CSTA's membership ranges from those who market garden seed and herbs to large western grain handlers, and from small family-run businesses to large multinational corporations.

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