



Canadian Food
Inspection Agency

Agence canadienne
d'inspection des aliments

HACCP GENERIC MODEL
for
SPROUTS GROWN IN WATER

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First Edition


Canada 

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INTRODUCTION

The *Code of Practice for the Hygienic Production of Sprouted Seeds*, developed with the sprout industry's input in 2001 and amended in February 2007, continues to be the current Canadian regulatory guideline used to assess sprout manufacturers' compliance with Canada's *Food and Drugs Act and Regulations*. The *HACCP Generic Model for Sprouts Grown in Water* and its companion document, *Food Safety Practices Guidance for Sprout Manufacturers* (FSPGSM), were developed by a committee consisting of representatives from the Canadian Food Inspection Agency (CFIA) and Health Canada. These documents are intended to be food safety resources for the sprout industry.

The generic model was developed using the CFIA's Food Safety Enhancement Program (FSEP) approach and tools: Chapters 1 and 2 of the FSEP Manual, including the 10 forms, as well as the *Codex Alimentarius Decision Tree* to determine the critical control points (CCPs). It provides a practical example for sprout manufacturers to follow in designing their own facility-specific HACCP plan. The HACCP generic model was used by the committee during the development of the FSPGSM. This guidance document incorporates Chapters 4 to 10 of the *Code of Practice for the Hygienic Production of Sprouted Seeds* as well as Chapter 1 to 8 of the *General Principles of Food Hygiene, Composition and Labelling*, in addition to other reference material. Using a HACCP approach, it provides guidance on controlling potential hazards. Chapter 1 provides information about developing operational controls for controlling hazards, while Chapters 2 to 8 provide information about developing Good Manufacturing Practices (GMPs) or Prerequisite Programs, as they are called in the FSEP approach. A hazard summary is provided after the Scope section in the FSPGSM.

Together, the generic model and the guidance document establish a practical system that sprout manufacturers can use to review all potential health and safety hazards in their operations, allowing the facility to focus on controlling the points that are critical to the safety of the finished product.

Limitations

The committee wishes to emphasize that the model described here is a **GENERIC MODEL**. It does not cover all sprout products and processes, nor does it list all possible associated hazards. This generic model is a template that can be adapted to most sprout operations. The process flow diagram in this generic model does not reflect the characteristics of the specific manufacturing line of any of the companies consulted by the committee; instead, it represents the basic processing steps of all companies consulted. The model reflects the entire line from receipt of the seeds through to shipping/distribution of the sprouts to hospitals, restaurants, institutions and retail outlets. For products or processes that differ significantly from this generic model, the HACCP team must still follow the seven principles of HACCP as described in the FSEP Manual.

(<http://www.inspection.gc.ca/english/fssa/polstrat/haccp/manue/tablee.shtml>).

The HACCP team at each establishment is responsible for identifying and controlling all hazards specific to its operations and for determining how each hazard is controlled. In order to identify all possible hazards, the HACCP team should consult the *Reference Database for Hazard Identification* developed by the CFIA, along with reference texts and scientific publications, as well as industry associations. A review of the manufacturer's processes and procedures should then be

conducted to determine whether each of these hazards actually exists in the facility. Where ingredients, procedures or processes differ from those in the generic model, the HACCP team should conduct a hazard analysis to determine whether any hazards should be added to or removed from the generic model and to determine how each of the additional hazards are controlled at the facility. Here are some examples:

- 1) Seeds sprouted in soil or sprouted with the use of fertilizers could require the addition of one or more hazards due to the increased risk of pathogen presence on sprouts.
- 2) If the facility does not use growth promotants or fertilizers at germination, it may be necessary to remove one or more hazards. Extra microbiological testing and validation may be necessary.

For additional information on the use of generic models in the development of facility-specific HACCP plans, manufacturers should consult the FSEP Manual.

The HACCP team at each establishment is also responsible for validation of the HACCP system; it should first validate the hazards that exist in the facility and then validate the standards for the Prerequisite Programs (GMPs) along with the standards for the critical limits of the critical control points. If the manufacturer is unable to find a scientific study or government regulation supporting the standard or critical limit identified in the HACCP plan, the facility should conduct a validation study to validate the control measure through testing. This step is generally completed during the development of the HACCP system. Once the control measure has been established and validated, the facility should carry out a validation to show that their process is able to consistently meet the standard. A validation of all control measures should be conducted at least once a year. During the yearly validation, all of the standards of the Prerequisite Programs (GMPs), as well as the critical limits for the critical control points, should be reviewed to ensure that the control measures continue to be effective in controlling the identified hazards. Manufacturers are reminded that a HACCP plan is a dynamic document that requires updating whenever any changes are made to the establishment, its processes or its products. A validation should also be conducted whenever new procedures, policies or control measures are introduced. For additional information on validation of the HACCP system, the FSEP Manual should be consulted.

During the development of the model, while working through hazard identification and analysis, the committee discussed and dealt with several issues. The following decisions and/or assumptions were made and are reflected in the generic model:

- 1) To minimize the likelihood of producing sprouts contaminated with pathogenic microorganisms, it is understood that seeds for sprouting should originate from producers that use Good Agricultural Practices (GAPs). However, it is recognized that pathogenic microorganisms may be reduced but not eliminated through adherence to these procedures. Therefore, seeds should undergo an antimicrobial treatment at the manufacturer to reduce the potential for contamination by pathogenic microorganisms.
- 2) Although the generic model was developed using the CFIA's FSEP approach, the committee endeavoured to adhere to the *General Principles of Food Hygiene, Composition and Labelling* (GPFHCL) wherever possible. For example, the GPFHCL covers the receiving of incoming materials and ingredients in Chapter 1, Operational Controls. The FSEP Manual covers receiving in the Prerequisite Program, Transportation, Receiving and Storage (Section B2.1.3).

During the development of the Generic Model and the FSPGSM, it was decided that, to be consistent with the FSEP approach, it would be assumed that facilities will identify receiving as a Prerequisite Program. Therefore, when hazards associated with the receiving of incoming materials and ingredients are put through the *Codex Alimentarius Decision Tree*, they will be controlled under Transportation and Storage (Section 6.1) and under Section 1.4.1 and 1.4.2 (Incoming Material Control) of the GPFHCL and the FSPGSM. If a facility wants to maintain a CCP at Receiving, this will be considered acceptable.

Where applicable, in the “Controlled at” column on Forms 5, 6 and 7, the FSEP Prerequisite Program is identified by the name it is given in the GPFHCL (i.e., “Transportation and Storage” and not “Transportation, Receiving and Storage”). In addition, the section of the FSPGSM specific to this step and/or hazard is referenced on Forms 5, 6 and 7 to provide additional information for the manufacturer; however, the FSPGSM section is not identified on Form 8. Only the name of the Prerequisite Program and the specific bullet in Appendix II of the FSEP Manual that relates to the control of the hazard is identified on Form 8.

- 3) While the generic model identifies the antimicrobial treatment step as a critical control point (CCP) intended to address the risk of pathogen contamination on sprouts, seed purchase specifications (requiring pathogen-free seeds, seeds produced under GAPs, etc.) and/or the testing of seeds at receiving are considered significant steps for reducing the risk of contamination of finished product. The testing of sprout irrigation water at 48 hours is also important.
- 4) The likelihood of biological hazards (e.g., *E. coli* O157:H7 and *Salmonella*) associated with incoming seeds is considered to be controlled by step 8, the antimicrobial treatment step. However, following this step, the antimicrobial treatment solution is drained off and the seeds are rinsed to remove the antimicrobial treatment and/or soaked during the pre-germination soak step. These steps are conducted at warm temperatures that could permit the growth of pathogenic microorganisms.
- 5) The use of non-approved chemicals (e.g., regulators, fertilizers, growth promoters or antimicrobial treatments), as well as the improper use of these chemicals, was identified as a chemical hazard that is likely to occur.
- 6) The rinsing and soaking of the seeds, as well as the irrigation and watering of the sprouts, serves to reduce the chemical hazard associated with the application of antimicrobial treatments.
- 7) Control of hazardous extraneous material, especially pebbles and stones, was raised as a concern. When addressing this issue for most seeds, the committee determined that if the pebbles and stones are present in the seeds received from the farm, there are few control measures available to the manufacturer. For mung beans, a trough system at the rinsing/cooling step is considered to effectively remove this hazard. However, this does not apply to the other types of seeds. Although irrigation/watering of the sprouts may remove some of the pebbles and stones, most of these are similar in size and/or colour to the seeds and difficult to differentiate and therefore remove. For some sprouts, the seeds are germinated in the retail container. Therefore, the committee decided that this hazard is beyond the manufacturer’s control (for all other seeds besides mung beans) and that the manufacturer could indicate on Form 9 how the hazard can be addressed at the farm level.
- 8) Testing of the spent irrigation water after 48 hours of germination was determined to constitute verification of the effectiveness of irrigation (culminating with the final rinse) in reducing the biological hazards.

9) The testing of the spent irrigation water was also determined to constitute verification of the effectiveness of the irrigation (culminating with the final rinse) in reducing the chemical hazards.

Definitions

Refrigerated Temperatures - Sprouts are labelled with the statement “**Keep Refrigerated,**” meaning 4°C or less but not frozen.

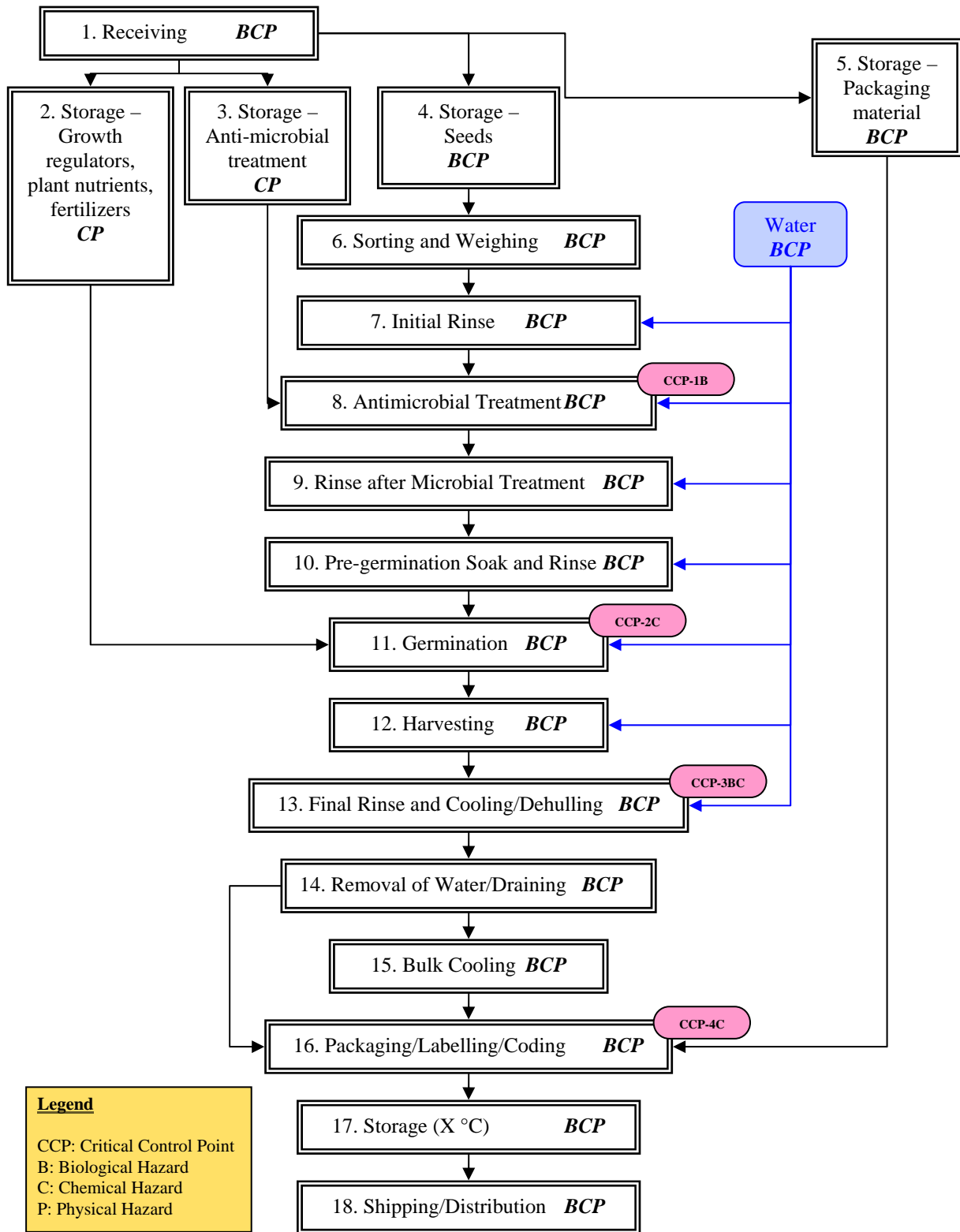
Pathogenic microorganisms - In the document, the term “pathogenic microorganisms” may include *Salmonella* spp., *Shigella* spp., enteropathogenic strains of *Escherichia coli* (*E. coli* O157:H7), viruses (Hepatitis A virus, Norovirus, and Rota virus), and parasites (*Cyclospora* spp. and *Cryptosporidium* spp.).

SPROUTS GROWN IN WATER HACCP Generic Model – Form 1
Product Description

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

<p>1. Product name(s)</p>	<p>Water-grown sprouts Note: the manufacturer should list each specific product name (mung bean sprouts, onion sprouts, alfalfa sprouts, etc.). Where the manufacturer produces numerous types of products in varying package sizes, a separate list may be attached to Form 1 or a reference to a <u>current computerized list of products may be added here</u>.</p>
<p>2. Important product characteristics (A_w, pH, preservatives, etc.)</p>	<p>No existing pathogen barriers</p>
<p>3. How the product will be used</p>	<p>Ready to eat</p>
<p>4. Packaging</p>	<p>Plastic liners Reusable plastic totes Plastic bags Cardboard boxes (bulk) Plastic containers (clam shells)</p>
<p>5. Shelf life</p>	<p>X days, depending upon the product, at refrigerated temperature (4°C)</p>
<p>6. Where it will be sold</p>	<p>Retail Restaurants Institutions Sold directly to general public For further processing (e.g., egg rolls, frozen dinners)</p>
<p>7. Labelling instructions</p>	<p>Keep refrigerated Rinse prior to use Best Before date</p>
<p>8. Special distribution control</p>	<p>Temperature control (X°C)</p>

**SPROUTS GROWN IN WATER HACCP Generic Model – Form 3
Process Flow Diagram**



**SPROUTS GROWN IN WATER HACCP Generic Model – Form 4
Plant Schematic**

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Construct the plant schematic diagram on Form 4.

Indicate the flows of raw and finished products as well as employee traffic and, where a possible hazard exists, indicate the movement of packaging material, waste or garbage.

Include the flows of all ingredients and packaging materials from the moment they are received through storage, preparation, processing and packaging to finished product holding and shipping.

Indicate employee traffic patterns throughout the establishment from the time the employees enter the building. Include movement into change rooms, washrooms, lunchrooms, offices and maintenance, as well as the employees' movement through food production areas of the facility.

This diagram should be your primary tool for identifying potential areas of cross-contamination (e.g., locations where allergen ingredients, food additives, waste or raw ingredients could come into unplanned contact with product or where employees could cross contaminate product).

(See the Canadian Food Inspection Agency's FSEP Manual – Chapter 2 – Section 4.4.2)

Note: The points of cross-contamination should be marked on the plant schematic and a full description of each of the identified hazards should be recorded on Form 5, 6 and/or 7, Form 8 and, where appropriate, Form 10 (examples of possible hazards that could be identified on Form 4 are provided on Form 5).

SPROUTS GROWN IN WATER HACCP Generic Model – Form 5
Hazard Identification

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

List all Biological hazards related to ingredients, incoming material, processing, product flow, etc.

Pathogenic microorganisms where indicated in the generic model may include: *Salmonella* spp., enteropathogenic strains of *Escherichia coli* (*E. coli* O157:H7), viruses (Hepatitis A virus, Norovirus, and Rotavirus), and parasites (*Cyclospora* spp. and *Cryptosporidium* spp.)

FSPGSM means Food Safety Practices Guidance for Sprout Manufacturers

Identified <u>Biological</u> Hazards (Bacteria, parasites, viruses, etc.)	Controlled at
INCOMING MATERIALS	
Seeds - Presence of pathogenic microorganisms from contamination in the field, harvest or transport.	-Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
Seeds - Presence of visible contamination (e.g., pests, insects, rodents' and birds' droppings, moulds).	-Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
Water/well water - Water not meeting Health Canada's Guidelines for Canadian Drinking Water Quality and any applicable provincial or municipal requirements, resulting in the presence of pathogenic microorganisms.	- Premises - A 4.1.1 Section 3.4.1 of the FSPGSM
Well water - Inadequate addition of chlorine resulting in failure to eliminate the presence of pathogenic microorganisms.	- Premises - A4.1.1 Section 3.4.1 of the FSPGSM
Packaging materials - Presence of pathogenic microorganisms due to contamination by faecal material from birds, rodents and insects.	-Transportation and Storage - B2.1.3 Section 1.4.2 of the FSPGSM
Packaging materials, seeds - Presence of pathogenic microorganisms from soiled/damaged or improperly handled packaging materials at the source.	-Transportation and Storage B2.1.3 Section 1.4.2 of the FSPGSM
PROCESS STEPS	
#1, # 4, # 5, # 6, # 7, #8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16 - Contamination with pathogenic microorganisms due to improper employee handling or hygiene.	- Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 1, # 4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16, # 17, # 18 - Contamination with pathogenic microorganisms due to contamination from overhead structures.	- Premises - A2.1.2 and A2.1.5 Section 3.2.1 and 3.2.3 of the FSPGSM - Sanitation and Pest control- E1.1.2 Section 4.1.1 of the FSPGSM
# 1, # 4, # 5, # 6, # 7, # 8, #9, #10, # 11, # 12. # 13. # 14. # 15, # 16, # 17, # 18 - Contamination of product with pathogenic microorganisms from contaminated air (ventilation system).	- Premises - A2.3.1 Section 3.2.3 of the FSPGSM
# 1, # 4, # 5, # 6, # 7, # 8, #9, #10, # 11, # 12. # 13. # 14. # 15, # 16, # 17, # 18 - Contamination with pathogenic microorganisms due to contact with pests (insects, rodents, birds).	- Sanitation and Pest control - E2.1.1 Section 4.2.1 of the FSPGSM
# 1 Receiving - Acceptance of incoming materials and ingredients not meeting specifications (i.e., not meeting standards as described on the specification sheet for each incoming ingredient and/or material).	-Transportation and Storage - B2.1.3 Section 1.4.1 and 1.4.2 of the FSPGSM
# 4, # 5 - Contamination of seeds and/or packaging material with pathogenic microorganisms due to exposed packaging material/damaged packaging resulting from improper storage procedures.	- Transportation and Storage- B2.1.2 Section 6.2.1 of the FSPGSM
# 4, # 17 - Growth of pathogenic microorganisms and moulds due to inappropriate storage temperatures/ humidity (damp storage conditions).	- Transportation and Storage - B2.1.1, B2.3.1 Section 6.2.1 and 6.2.3 of the FSPGSM
# 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16 - Contamination with pathogenic microorganisms from containers, tools and equipment that have not been properly cleaned and disinfected.	- Sanitation and Pest control - E1.1.1 Section 4.1.1 of the FSPGSM
# 7 Initial rinse - Presence of pathogenic microorganisms on seeds as a result of improper rinsing (e.g., inadequate volume of water, inadequate agitation, inadequate surface in contact with water, or inadequate number of rinses [i.e. not continuing to rinse until the rinse water remains clear]).	# 8 Antimicrobial Treatment of Seeds CCP - 1B
# 8 Antimicrobial treatment for seeds - Survival of pathogenic microorganisms (<i>Salmonella</i> spp., <i>E.coli</i> O157:H7) due to improper disinfection (e.g., inadequate concentration of antimicrobial treatment solution, inadequate contact time of seeds with antimicrobial treatment solution, inadequate agitation, inadequate volume of antimicrobial treatment solution, inadequate water temperature).	CCP-1B Section 1.8.1 of the FSPGSM
#8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16 - Cross-contamination with pathogenic microorganisms due to inadequate operational separation between areas (i.e., employee hygiene procedures between areas, boot dips, floor sprays etc.).	-Premises - A2.1.8 Section 3.2.1 of the FSPGSM
# 9, # 10, #11 - Growth of pathogenic microorganisms due to time/temperature abuse (i.e., use of warm rinse water / warm room).	# 13 Final Rinse and Cooling/Dehulling CCP-3BC
# 10 Pre-germination soak and rinse - Presence of pathogenic microorganisms as a result of inadequate rinsing after soaking (i.e., after soaking in warm water in a warm room has resulted in bacterial growth).	# 13 Final Rinse and Cooling/Dehulling CCP-3BC

SPROUTS GROWN IN WATER HACCP Generic Model – Form 5
Hazard Identification

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

List all Biological hazards related to ingredients, incoming material, processing, product flow, etc.

Pathogenic microorganisms where indicated in the generic model may include: *Salmonella* spp., enteropathogenic strains of *Escherichia coli* (*E. coli* O157:H7), viruses (Hepatitis A virus, Norovirus, and Rotavirus), and parasites (*Cyclospora* spp. and *Cryptosporidium* spp.)

FSPGSM means Food Safety Practices Guidance for Sprout Manufacturers

Identified <u>Biological</u> Hazards (Bacteria, parasites, viruses, etc.)	Controlled at
# 11 Germination - Cross-contamination of sprouting seeds with pathogenic microorganisms due to backflow or cross-connected pipe.	- Premises - A2.4.1 Section 3.4.1 of the FSPGSM
# 13 Final Rinse and Cooling/Dehulling - Growth of pathogenic microorganisms due to time/temperature abuse as a result of delays between harvesting and final rinse and/or cooling/dehulling	CCP-3BC Section 1.8.1 of the FSPGSM
# 13 Final Rinse and Cooling/Dehulling - Growth of pathogenic microorganisms due to time/temperature abuse as a result of elevated water temperature, insufficient flow and/or insufficient volume to ensure water temperature remains cold and cools sprouts.	CCP-3BC Section 1.8.1 of the FSPGSM
# 13 Final Rinse and Cooling/Dehulling - Growth of pathogenic microorganisms due to time/temperature abuse as a result of insufficient cold water changes/changeovers during rinsing and/or use of warm water during rinsing.	CCP-3BC Section 1.8.1 of the FSPGSM
# 14 - Removal of Water/Draining - Growth of pathogenic microorganisms due to time/temperature abuse (i.e., activity is occurring in a warm room).	- Transportation and Storage - B2.1.1 Section 1.8.1 of the FSPGSM
# 15 Bulk cooling - Growth of pathogenic microorganisms due to time/temperature abuse (i.e., inadequate cooling).	- Transportation and Storage - B2.1.1 Section 1.8.1 of the FSPGSM
# 16 Packaging/Labeling/Coding - Contamination of sprouts with pathogenic microorganisms from packaging material as a result of damage or soiling of containers/packaging material during storage.	- Transportation and Storage - B2.1.2 Section 1.5.1 and 6.2.1 of the FSPGSM
# 16 Packaging/Labeling/Coding - Failure to apply correct/legible code date, resulting in inability to recall product.	- Recall - F1.2.1 Section 1.7.1 and 8.2.1 of the FSPGSM
# 17 Storage - Growth of pathogenic microorganisms due to time/temperature abuse (i.e., inappropriate temperatures/ humidity in storage).	- Transportation and Storage - B2.3.1 Section 6.2.3 and 3.2.3 of the FSPGSM
# 17 Storage - Contamination of sprouts with pathogenic microorganisms due to inadequate separation from incoming ingredients and materials (e.g., seeds, packaging materials, other raw products).	- Transportation and Storage - B2.3.1 Section 6.2.3 of the FSPGSM
# 17 Storage - Growth of pathogenic microorganisms due to excess time of storage (i.e. product stored past "Best Before" date and/or stock not rotated properly).	- Transportation and Storage - B2.3.1 Section 6.2.3 of the FSPGSM
# 17 Storage - Contamination with pathogenic microorganisms in storage due to damaged containers resulting from: 1) improper storage procedures and/or 2) improper employee hygiene and/or handling procedures.	1) - Transportation and Storage - B2.3.1 Section 6.2.3 of the FSPGSM 2) - Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 18 Shipping - Growth of pathogenic microorganisms due to time/temperature abuse (i.e., inadequate control of temperature of room or carrier).	- Transportation and Storage - B1.2.2 and B2.3.1 Section 6.1.2 of the FSPGSM
# 18 Shipping - Contamination with pathogenic microorganisms due to damaged containers as a result of 1) improper loading and shipping procedures 2) improper employee handling and/or hygiene procedures.	1) Transportation and Storage - B1.1.2 and B1.2.2 Section 6.1.1 of the FSPGSM 2) Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 18 Shipping - Contamination with pathogenic microorganisms as a result of loading sprouts onto a carrier that is unacceptable for the transportation of food (e.g., cleanliness of carrier, state of repair of carrier).	- Transportation and Storage - B1.1.1 Section 6.1.1 of the FSPGSM
# 18 Shipping - Contamination with pathogenic microorganisms as a result of transporting sprouts on the same carrier as non-ready-to-eat products (e.g., raw meat).	- Transportation and Storage - B1.2.2 Section 6.1.1 of the FSPGSM
Form 4 - Plant Schematic - B1 - Entrance to germination room and B2 - Entrance to packaging room - Improper employee hygienic procedures between rooms resulting in contamination with pathogenic microorganisms. (i.e., improper use of foot dips / hand dips / change of clothing). Note: B1 and B2 should appear on Form 4 - Plant Schematic	- Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
Form 4 - Plant Schematic - B2 - Entrance to germination room and B2 - Entrance to packaging room - Concentration of sanitizers in hand dips / foot dips inadequate to control pathogenic microorganisms. Note: B1 and B2 should appear on Form 4 - Plant Schematic	- Premises - A2.1.8 Section 3.2.1 of the FSPGSM

SPROUTS GROWN IN WATER HACCP Generic Model – Form 6
Hazard Identification

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

List all Chemical hazards related to ingredients, incoming material, processing, product flow, etc.

Identified <u>Chemical</u> Hazards	Controlled at
INCOMING MATERIALS	
Seeds - Presence of pesticide (including herbicide and fungicide) residues above the maximum allowable residue limits.	Form 9
Seeds - Presence of visible discolouration on bag and/or seeds indicating presence of lubricants or other industrial chemicals from field equipment.	-Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
Seeds - Presence of undeclared allergenic ingredients (e.g., sesame seeds, soy and wheat).	-Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
Water / well water - Presence of heavy metal (e.g., arsenic), pesticides, excess chlorine.	- Premises - A4.1.1 Section 3.4.1 of the FSPGSM
Packaging materials / antimicrobial treatments / growth regulators /plant nutrients / fertilizers - Non-food-grade material and/or not suitable for intended use.	-Transportation and Storage - B2.1.3 Section 1.4.1 and 1.4.2 of the FSPGSM
Packaging materials / antimicrobial treatments /growth regulators / plant nutrients / fertilizers - Not approved for use with or on foods (listed in the Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products published by the CFIA or a Letter of No Objection from Health Canada).	-Transportation and Storage - B2.2.1 Section 1.4.1 and 1.4.2 of the FSPGSM
Antimicrobial treatments / growth regulators / plant nutrients / fertilizers - Concentration is not the same as what appears on the label of the container.	-Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
PROCESS STEPS	
# 1, # 4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16, # 17, # 18 - Contamination of non-allergenic seeds with allergenic seeds as a result of improper employee handling.	- Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 1 Receiving - Acceptance of incoming materials and ingredients not meeting specifications (i.e., not meeting standards as described on the specification sheet for each incoming ingredient and/or material).	-Transportation and Storage -B2.1.3 Section 1.4.1 and 1.4.2 of the FSPGSM
# 1 Receiving - Contamination of seeds with non-food Chemicals or chemical residues (cleaners, sanitizers, lubricants) at Receiving as a result of 1) improper receiving procedures, 2) improper sanitation procedures resulting in overspray or contact with chemical residues, and/or 3) improper equipment maintenance procedures resulting in contamination with lubricants/oil, etc.	1) Transportation and Storage- B2.1.2 Section 6.2.1 of the FSPGSM 2) Sanitation and Pest control - E1.1.1 and E1.1.2 Section 4.1.1 of the FSPGSM 3) Equipment - C1.1.1 Section 2.1.1 - 2.1.3 of the FSPGSM
# 2 - Storage - growth regulators, plant nutrients, fertilizers - Contamination of seeds, sprouts and/or packaging materials due to improper storage of chemicals.	- Transportation and Storage - B2.2.2, B2.2.3 and B2.2.4 Section 6.2.2 of the FSPGSM
# 2, # 3, # 4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16 - Contamination with non-food Chemicals (e.g., cleaners/ sanitizers/lubricants) as a result of 1) improper storage of seeds/sprouts resulting in damaged packaging and exposed products, 2) improper sanitation procedures resulting in overspray or contact with chemical residues and/or 3) improper equipment maintenance procedures resulting in contamination with lubricants/oils, etc.	1) Transportation and Storage - B2.1.2 Section 6.2.1 and 6.2.2 of the FSPGSM 2) Sanitation and Pest control - E1.1.1 and E1.1.2 Section 4.1.1 of the FSPGSM 3) Equipment - C1.1.1 Section 2.1.1 - 2.1.3 of the FSPGSM
#4, # 17 - Cross-contamination with allergenic products due to inappropriate storage of allergenic product.	- Transportation and Storage - B2.1.2 Section 6.2.1 of the FSPGSM
#6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, #16 - Contamination with residues of cleaning agent and sanitizer left on containers, tools and equipment that have not been properly cleaned and/or disinfected.	- Sanitation and Pest control - E1.1.1 Section 4.1.1 of the FSPGSM
# 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16 - Cross-contamination by allergenic product(s) due to failure to clean properly between processing of products that contain allergens and products that do not.	- Sanitation and Pest control - E1.1.1 and E1.1.2 Section 4.1.1 of the FSPGSM - Premises A2.1.8 Section 3.2.1 of the FSPGSM
# 8 Antimicrobial treatment for seeds - Contamination of seeds with excess concentrations of antimicrobial treatment due to improper chemical application rates (chlorine or other).	# 13 Final Rinse and Cooling/Dehulling CCP-3BC
# 9 Rinse after antimicrobial treatment - Rinse insufficient to reduce concentration of antimicrobial treatment in sprouts.	# 13 Final Rinse and Cooling/Dehulling CCP-3BC

**SPROUTS GROWN IN WATER HACCP Generic Model – Form 6
Hazard Identification**

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

List all Chemical hazards related to ingredients, incoming material, processing, product flow, etc.

Identified <u>Chemical</u> Hazards	Controlled at
# 10 Pre-germination soak and rinse - Contamination of sprouts with excess concentrations of growth regulators / plant nutrients / fertilizers and/or antimicrobial treatments due to improper chemical application rates.	# 11 Germination CCP-2C
# 11 Germination - Contamination of sprouts with excess concentrations of growth regulators / plant nutrients / fertilizers and/or antimicrobial treatments due to improper chemical application.	CCP-2C Section 1.8.1 of the FSPGSM
# 11, # 16 - Contamination of sprouts caused by chemical leaks (lubricants) from equipment (e.g., drum and conveyor).	- Equipment - C1.1.1 Section 2.1.1 - 2.1.3 of the FSPGSM
# 12, # 13, # 14, # 15, # 16, # 17, # 18 - Contamination of sprouts with allergenic sprouts as a result of improper employee handling.	- Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 13 Final Rinse and Cooling/Dehulling - Contamination of sprouts with excess concentrations of antimicrobial treatment due to improper rinsing (resulting in failure to reduce the concentration of antimicrobial treatment in rinse water run-off).	CCP-3BC Section 1.8.1 of the FSPGSM
# 16 Packaging/Labeling/Coding - Contamination from inks/solvents as a result of 1) - equipment that is not properly maintained and/or set up and/or 2) - improper storage of inks/solvents.	1) Equipment - C1.1.1 Section 2.1.1 - 2.1.3 of the FSPGSM 2) Transportation and Storage - B2.2.3 Section 6.2.2 of the FSPGSM
# 16 Packaging/Labeling/Coding - Presence of allergens in product that is not identified to contain allergens on the label as a result of improper operational procedures (i.e., packaging product that does not contain allergens prior to packaging product that contains allergens without a full clean-up in between).	- Premises - A2.1.8 Section 1.6.1 and 3.2.1 of the FSPGSM - Sanitation and Pest Control - E1.1.1 Section 4.1.1 of the FSPGSM
# 16 Packaging/Labeling/Coding - Presence of undeclared allergens due to incorrect label application and/ or incorrect list of ingredients (e.g., soy, sesame, wheat).	CCP-4C Section 1.2.1, 1.6.1 and 1.9.1 of the FSPGSM
# 17 Storage - Chemical contamination from refrigerant leak (e.g., ammonia) due to improper equipment maintenance procedures.	- Equipment - C1.1.1 Section 2.1.1 - 2.1.3 of the FSPGSM
# 18 Shipping - Contamination from incompatible products or materials on the shipping trailer.	- Transportation and Storage - B1.2.2 Section 6.1.1 of the FSPGSM

SPROUTS GROWN IN WATER HACCP Generic Model – Form 7

Hazard Identification

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

List all Physical hazards related to ingredients, incoming material, processing, product flow, etc.

Identified <u>Physical</u> Hazards	Controlled at
INCOMING MATERIALS	
Seeds - Presence of hazardous extraneous material from the fields and harvesters (e.g., stones, wood, metal, screw, glass).	# 13 Final Rinse and Cooling/Dehulling CCP-3BC
Seeds - Presence of hazardous extraneous material as a result of improper employee handling procedures at the source (e.g., stones, wood, metal, glass).	- Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
Seeds - Presence of hazardous extraneous materials due to damaged packaging as a result of improper handling procedures at the source (e.g., stones, pebbles, wood, metal, glass).	-Transportation and Storage - B2.1.3 Section 1.4.1 of the FSPGSM
Packaging materials, antimicrobial treatments, growth regulators, plant nutrients, fertilizers - Presence of hazardous extraneous material as a result of improper handling procedures at the source.	-Transportation and Storage - B2.1.3 Section 1.4.1 and 1.4.2 of the FSPGSM
Water/well water - Presence of hazardous extraneous material (metallic).	- Premise - A4.1.1 Section 3.4.1 of the FSPGSM
PROCESS STEPS	
# 1 Receiving - Acceptance of incoming materials and ingredients not meeting specifications (i.e., not meeting standards as described on specification sheet for each incoming material and/or ingredient).	-Transportation and Storage - B2.1.3 Section 1.4.1 and 1.4.2 of the FSPGSM
#1, #4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16, # 17, # 18 - Contamination with hazardous extraneous material due to improper employee handling (e.g., jewellery, pens, paper clips falling into product).	- Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 2, # 3, # 4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16 - Contamination with hazardous extraneous material due to the introduction of foreign material into product as a result of 1) dirty or poorly maintained overhead structures and/or 2) damaged packaging material resulting in exposed or open product due to poor storage conditions and/or 3) damaged packaging material resulting in exposed or open product due to poor employee handling procedures and/or 4) improper maintenance procedures.	1) Premises - A2.1.2 and A2.1.5 Section 3.2.1 of the FSPGSM 2) Transportation and Storage - B2.1.2 and B2.3.1 Section 6.2.1 and 6.2.2 of the FSPGSM 3) Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM 4) Equipment - C1.1.1 Section 2.1 .1 - 2.1.3 of the FSPGSM
# 6 Sorting/Weighing - Failure to remove product containing hazardous extraneous material and/or failure to remove hazardous extraneous material (e.g., stones, pebbles, wood, metal, glass)	# 13 Final Rinse and Cooling/ Dehulling CCP-3BC
# 7 Initial Rinse - Mung beans - Presence of hazardous extraneous material due to failure to remove hazardous extraneous material (e.g., stones, pebbles, wood, metal, glass).	# 13 Final Rinse and Cooling/ Dehulling CCP-3BC
# 13 Final rinse and Cooling/Dehulling - Mung bean sprouts - Presence of hazardous extraneous material (e.g., stones/pebbles) due to failure to remove as a result of improper maintenance of equipment.	- Equipment - C1.1.1 Section 2.1.1 - 2.1.3 of the FSPGSM
# 13 Final rinse and Cooling/Dehulling - All Other Seed Sprouts - Presence of hazardous extraneous material (e.g., stones/pebbles) due to failure to remove.	Form # 9 - GAP
# 17 Storage - Contamination with hazardous extraneous material as a result of 1) improper storage conditions resulting in damaged containers and/or exposed product and/or 2) improper employee handling procedures resulting in damaged containers and/or exposed product.	1) Transportation and Storage - B2.3.1 Section 6.1.1 of the FSPGSM 2) Personnel D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM
# 18 Shipping - Contamination with hazardous extraneous material due to damaged containers as a result of 1) improper condition of transport vehicle and/or 2) improper loading and arranging procedures and/or 3) improper employee handling procedures resulting in damaged containers and/or exposed products.	1) Transportation and Storage -B1.1.1 Section 6.1.1 of the FSPGSM 2) Transportation and Storage - B1.1.2 Section 6.1.1 of the FSPGSM 3) - Personnel - D1.1.1 and D2.1.1 Section 5.1.1 and 5.2.1 of the FSPGSM

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
Seeds	<p>Biological Presence of pathogenic microorganisms from contamination in the field, harvest or transport. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
	<p>Biological Presence of visible contamination (e.g., pests, insects, rodents' and birds' droppings, moulds). Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
	<p>Chemical Presence of pesticide (including herbicide and fungicide) residues above the maximum allowable residue limits. No</p>	<p>No Control at the farm level. See Form 9.</p>				
	<p>Chemical Presence of visible discolouration on bag and/or seeds indicating presence of lubricants or other industrial chemicals from field equipment. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
	<p>Chemical Presence of undeclared allergenic ingredients (e.g., sesame seeds, soy, wheat). Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
Seeds	<p>Physical Presence of hazardous extraneous material from the fields and harvesters (e.g., stones, pebbles, wood, metal, glass). No</p> <p>Physical Presence of hazardous extraneous material as a result of improper employee handling procedures at the source (e.g., stones, wood, metal, glass). Yes Prerequisite Program: Transportation and Storage - B2.1.3</p> <p>Physical Presence of hazardous extraneous materials due to damaged packaging as a result of improper handling procedures at the source (e.g., stones, pebbles, wood, metal, glass). Yes Prerequisite Program: Transportation and Storage B2.1.3</p>	<p>Yes Inspection and initial rinse step</p>	<p>Yes</p>	<p>N/A</p>	<p>Yes # 13 Final Rinse and Cooling/ Dehulling CCP-3BC</p>	
Water/well water	<p>Biological Water not meeting the Health Canada's Guidelines for Canadian Drinking Water Quality and any applicable provincial or municipal requirements, resulting in the presence of pathogenic microorganisms. Yes Prerequisite Program: Premises - A4.1.1</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
	<p>Chemical Presence of heavy metal (e.g., arsenic), pesticides, excess chlorine. Yes Prerequisite Program: Premises - A4.1.1</p>					
Water/well water	<p>Physical Presence of hazardous extraneous material (metallic). Yes Prerequisite Program: Premises - A4.1.1</p>					
Well water	<p>Biological Inadequate addition of chlorine resulting in failure to eliminate the presence of pathogenic microorganisms. Yes Prerequisite Program: Premises A4.1.1</p>					
Packaging materials	<p>Biological Presence of pathogenic microorganisms due to Contamination by faecal material from birds, rodents and insects. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
Packaging materials, seeds	<p>Biological Presence of pathogenic microorganisms from soiled/damaged or improperly handled packaging materials at the source. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
Packaging materials/ antimicrobial treatments/ growth regulators / plant nutrients / fertilizers	<p>Chemical Non-food-grade material and/or not suitable for intended use. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
Antimicrobial treatments/ growth regulators/ plant nutrients/ fertilizers	<p>Chemical Not approved for use with or on foods (listed in the Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products published by the CFIA or a Letter of No Objection from Health Canada). Yes Prerequisite Program: Transportation and Storage - B2.2.1</p>					
Antimicrobial treatments/ growth regulators/ plant nutrients/ fertilizers	<p>Physical Presence of hazardous extraneous material as a result of improper handling procedures at the source. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
Antimicrobial treatments/ growth regulators/ plant nutrients/ fertilizers	<p>Chemical Concentration is not the same as what appears on the label of the container. Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
PROCESS STEPS						
# 1, # 4, # 5, # 6, # 7, # 8, \ # 9, # 10, # 11, # 12, #13, # 14, # 15, # 16	<p>Biological Contamination with pathogenic microorganisms due to improper employee handling or hygiene. Yes Prerequisite Program:</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
	Personnel D1.1.1 and D2.1.1					
#1, # 4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, #13, # 14, # 15, # 16, # 17, # 18	<p>Biological</p> <p>Contamination with pathogenic microorganisms due to contamination from overhead structures.</p> <p>Yes</p> <p>Premises - A2.1.2 and A2.1.5</p> <p>Sanitation and Pest Control - E1.1.2</p>					
	<p>Biological</p> <p>Contamination of product with pathogenic microorganisms from contaminated air (ventilation systems).</p> <p>Yes</p> <p>Prerequisite Program:</p> <p>Premises - A2.3.1</p>					
	<p>Biological</p> <p>Contamination with pathogenic microorganisms due to contact with pests (insects, rodents, birds)</p> <p>Yes</p> <p>Prerequisite Program</p> <p>Sanitation and Pest Control - E2.1.1</p>					
	<p>Chemical</p> <p>Contamination of non-allergenic seeds with allergenic seeds as a result of improper employee handling.</p> <p>Yes</p> <p>Prerequisite Program:</p> <p>Personnel - D1.1.1 and D2.1.1</p>					
	<p>Physical</p> <p>Contamination with hazardous extraneous material due to improper employee handling (e.g., jewellery, pens, paper clips, etc., falling into product).</p> <p>Yes</p> <p>Prerequisite Program:</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
	Personnel - D1.1.1 and D2.1.1					
# 1 Receiving	<p>Biological</p> <p>Acceptance of incoming materials and ingredients not meeting specifications (i.e., not meeting standards as described on the specification sheet for each incoming ingredient and/or material). Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
	<p>Chemical</p> <p>Acceptance of incoming materials and ingredients not meeting specifications (i.e., not meeting standards as described on the specification sheet for each incoming ingredient and/or material). Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
	<p>Chemical</p> <p>Contamination with non-food chemicals or chemical residues (cleaners, sanitizers, lubricants) at Receiving as a result of 1) improper receiving procedures and/or 2) improper sanitation procedures resulting in overspray or contact with chemical residues, and/or 3) improper equipment maintenance procedures resulting in contamination with lubricants/oil, etc. Yes Prerequisite Program: 1) Transportation and Storage - B2.1.2 2) Sanitation and Pest Control - E1.1.1 and E1.1.2 3) Equipment - C1.1.1</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
	<p>Physical</p> <p>Acceptance of incoming materials and ingredients not meeting specifications (i.e., not meeting standards as described on the specification sheet for each incoming ingredient and/or material). Yes Prerequisite Program: Transportation and Storage - B2.1.3</p>					
<p># 2, # 3, # 4, # 5, # 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16</p>	<p>Chemical</p> <p>Contamination with non-food chemicals (e.g., cleaners/ sanitizers/lubricants) as a result of</p> <ol style="list-style-type: none"> 1) improper storage of seeds/sprouts resulting in damaged packaging and exposed products. 2) improper sanitation procedures resulting in overspray or contact with chemical residues 3) improper equipment maintenance procedures resulting in contamination with lubricants/oils etc. <p>Yes Prerequisite Programs: 1) Transportation and Storage - B2.1.2 2) Sanitation and Pest Control - E1.1.1 and E1.1.2 3) Equipment - C1.1.1</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
	<p>Physical Contamination with hazardous extraneous material due to the introduction of foreign material into product as a result of 1) dirty or poorly maintained overhead structures and/or 2) damaged packaging material resulting in exposed or open product due to poor storage conditions and/or 3) damaged packaging material resulting in exposed or open product due to poor employee handling procedures and/or 4) improper maintenance procedures. Yes Prerequisite Programs: 1) Premises- A2.1.2 and A2.1.5 2) Transportation and Storage - B2.1.2 and B2.3.1 3) Personnel - D1.1.1 and D2.1.1 4) Equipment - C1.1.1</p>					
# 2 Storage - growth regulators, plant nutrients, fertilizers	<p>Chemical Contamination of seeds, sprouts and/or packaging materials due to improper storage of chemicals. Yes Prerequisite Program Transportation and Storage - B2.2.2, B2.2.3 and B2.2.4</p>					
# 4, # 5	<p>Biological Contamination of seeds and/or packaging material with pathogenic microorganisms due to exposed packaging material/damaged packaging resulting from improper storage procedures. Yes Prerequisite Programs: Transportation and Storage - B2.1.2</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	Category and identified hazard Determine if fully controlled by Prerequisite Program. * If yes = indicate "Prerequisite Program" and proceed to next identified hazard. * If no = proceed to question 1 (Q1).	Q1. Could a control measure be used by the operator at any process step? * If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard. * If yes = describe the measure and proceed to Q2.	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? * If no = not CCP. Proceed to the next identified hazard. * If yes = proceed to Q3.	Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level? * If no = proceed to Q4. * If yes = CCP. Enter its number in the last column.	Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level? * If no = CCP. Enter its number in the last column. * If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.	CCP number * Proceed to next identified hazard.
# 4, # 17	Biological Growth of pathogenic microorganisms and moulds due to inappropriate storage temperatures / humidity (damp storage conditions). Yes Prerequisite Program: Transportation and Storage - B2.1.1 and B2.3.1					
# 4, # 17	Chemical Cross-contamination with allergenic products due to inappropriate storage of allergenic product. Yes Prerequisite Programs: Transportation and Storage - B2.1.2					
# 6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16	Biological Contamination with pathogenic microorganisms from containers, tools and equipment that have not been properly cleaned and disinfected. Yes Prerequisite Program: Sanitation and Pest Control - E1.1.1					
#6, # 7, # 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, #16	Chemical Contamination with residues of cleaning agent and sanitizer left on containers, tools and equipment that have not been properly cleaned and/or disinfected. Yes Prerequisite Program: Sanitation and Pest Control - E1.1.1					
	Chemical Contamination by allergenic product(s) due to failure to clean properly between processing of products that contain allergens and products that do not. Yes Prerequisite Program: Sanitation and Pest Control - E1.1.1 and E1.1.2					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	Category and identified hazard Determine if fully controlled by Prerequisite Program. * If yes = indicate "Prerequisite Program" and proceed to next identified hazard. * If no = proceed to question 1 (Q1).	Q1. Could a control measure be used by the operator at any process step? * If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard. * If yes = describe the measure and proceed to Q2.	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? * If no = not CCP. Proceed to the next identified hazard. * If yes = proceed to Q3.	Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level? * If no = proceed to Q4. * If yes = CCP. Enter its number in the last column.	Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level? * If no = CCP. Enter its number in the last column. * If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.	CCP number * Proceed to next identified hazard.
	Premises - A2.1.8					
# 6 Sorting/ Weighing	Physical Failure to remove product containing hazardous extraneous material and/or failure to remove hazardous extraneous material (e.g., stones, pebbles, wood, metal, glass). No	Yes Removal of stones and pebbles at rinsing/cooling step	Yes	No	Yes # 13 Final Rinse and Cooling/ Dehulling CCP-3BC	
# 7 Initial rinse	Biological Presence of pathogenic microorganisms on seeds as a result of improper rinsing (e.g., inadequate volume of water, inadequate agitation, inadequate surface in contact with water or inadequate number of rinses [i.e., not continuing to rinse until the rinse water remains clear]). No	Yes Monitor to ensure adequate volumes of water, adequate agitation, adequate surface in contact with water and/or adequate number of rinses	Yes	No	# 8 - Antimicrobial Treatment of Seeds CCP-1B	
# 7 Initial rinse	Physical Presence of hazardous extraneous material due to failure to remove (e.g., stones, pebbles, wood, metal, glass). No	Monitor to ensure sufficient rinsing	Yes	No	Yes # 13 Final Rinse and Cooling/ Dehulling CCP-3BC	
# 8, # 9, # 10, # 11, # 12, # 13, # 14, # 15, # 16	Biological Cross-contamination with pathogenic microorganisms due to inadequate operational separation between areas (e.g., proper employee hygiene procedures between areas, boot dips, floor sprays, etc.). Yes Prerequisite Program: Premises - A2.1.8					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Incoming material / process step/ hazards on schematic diagram	Category and identified hazard Determine if fully controlled by Prerequisite Program. * If yes = indicate "Prerequisite Program" and proceed to next identified hazard. * If no = proceed to question 1 (Q1).	Q1. Could a control measure be used by the operator at any process step? * If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard. * If yes = describe the measure and proceed to Q2.	Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level? * If no = not CCP. Proceed to the next identified hazard. * If yes = proceed to Q3.	Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level? * If no = proceed to Q4. * If yes = CCP. Enter its number in the last column.	Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level? * If no = CCP. Enter its number in the last column. * If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.	CCP number * Proceed to next identified hazard.
# 8 Antimicrobial treatment for Seeds	Biological Survival of pathogenic microorganisms (i.e., <i>E. coli</i> O157:H7, <i>Salmonella</i> spp.) due to improper disinfection (e.g., inadequate concentration of antimicrobial treatment solution, inadequate contact time of seeds with antimicrobial treatment solution, inadequate agitation, inadequate volume of antimicrobial treatment solution, inadequate water temperature). No	Yes Monitoring the antimicrobial treatment (e.g., concentration of antimicrobial treatment/contact time/ agitation, volume of antimicrobial treatment solution, fresh solution of antimicrobial treatment used for each sprout lot).	Yes	Yes		CCP-1B
# 8 Antimicrobial treatment for Seeds	Chemical Contamination of seeds with excess concentrations of antimicrobial treatment due to improper chemical application rates (chlorine or other). No	Yes Proper addition of antimicrobial. Proper rinsing of sprouts.	Yes	No	Yes # 13 Final Rinse and Cooling/Dehulling CCP-3BC	
# 9, # 10, # 11	Biological Growth of pathogenic microorganisms due to time/temperature abuse (i.e., use of warm rinse water/warm room). No	Yes Monitoring the rinse water temperature and room temperature.	Yes	No	Yes # 13 Final Rinse and Cooling/Dehulling CCP-3BC	
# 9 Rinse after antimicrobial treatment	Chemical Rinsing insufficient to reduce concentration of antimicrobial treatment in sprouts. No	Yes Rinse seeds as described in the SOP to meet GMP levels.	Yes	No	Yes # 13 Final Rinse and Cooling/Dehulling CCP-3BC	

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CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

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# 10 Pre-germination soak and rinse	Biological Presence of pathogenic microorganisms as a result of inadequate rinsing after soaking (after soaking in warm water in a warm room has resulted in bacterial growth). No	Yes Monitor the water temperature of the soak. Monitor the room temperature. Ensure the rinse follows proper procedures.	Yes	No	Yes # 13 Final Rinse and Cooling/ Dehulling CCP-3BC	
# 10 Pre-germination soak and rinse	Chemical Contamination of sprouts with excess concentrations of growth regulators/ plant nutrients/fertilizers and/or antimicrobial treatments due to improper chemical application. No	Yes Monitoring the mixing of growth regulators/plant nutrients/fertilizers/ and/or antimicrobial agents to ensure proper concentrations are used	Yes	No	Yes # 11 - Germination CCP-2C	
# 11 Germination	Biological Cross-contamination of sprouting seeds with pathogenic microorganisms due to backflow or cross-connected pipe. Yes Prerequisite Program: Premises - A2.4.1					
# 11 Germination, #16 Packaging/	Chemical Contamination of sprouts caused by chemical leaks (lubricants) from equipment (e.g., drum and conveyor).	Yes, Monitoring the addition of chemicals	Yes	No	No	CCP-2C
# 11 Germination, #16 Packaging/	Chemical Contamination of sprouts caused by chemical leaks (lubricants) from equipment (e.g., drum and conveyor).					

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CRITICAL CONTROL POINTS (CCP) DETERMINATION

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

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Labelling/ Coding	Yes Prerequisite Program: Equipment - C1.1.1					
# 12, # 13, # 14, # 15, # 16, # 17, # 18	<u>Chemical</u> Contamination of sprouts with allergenic sprouts as a result of improper employee handling. Yes Prerequisite program: Personnel - D1.1.1 and D2.1.1					
# 13 Final Rinse and Cooling/ Dehulling	<u>Biological</u> Growth of pathogenic microorganisms due to time/temperature abuse as a result of unnecessary delays between harvesting and final rinse and/or cooling/dehulling. No	Yes Monitoring the time from harvesting to final rinse and/or cooling	Yes	Yes		CCP-3BC
	<u>Biological</u> Growth of pathogenic microorganisms due to time/temperature abuse as a result of elevated water temperature, insufficient flow and/or insufficient volume to ensure water temperature remains cold and cools sprouts. No	Yes Monitoring the flow, volume and temperature of rinse water	Yes	Yes		CCP-3BC
	<u>Biological</u> Growth of pathogenic microorganisms due to time/temperature abuse as a result of insufficient cold water changes/changeovers during rinsing and/or use of warm water during rinsing. No	Yes Monitoring changing of rinse water and the temperature of rinse water	Yes	Yes		CCP-3BC

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CRITICAL CONTROL POINTS (CCP) DETERMINATION

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Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
# 13 Final Rinse and Cooling/ Dehulling	<p>Chemical</p> <p>Contamination of sprouts with excess concentrations of antimicrobial treatment due to improper rinsing (resulting in failure to reduce concentration of antimicrobial treatment in rinse water run-off).</p> <p>No</p>	<p>Yes</p> <p>Monitor the concentration of antimicrobial treatment</p> <p>Monitor the rinsing/irrigating procedures.</p>	<p>Yes</p>	<p>No</p>	<p>No</p>	<p>CCP-3BC</p>
# 13 Final Rinse and Cooling/ Dehulling - Mung bean sprouts	<p>Physical</p> <p>Presence of hazardous extraneous material (e.g., stones/pebbles) due to failure to remove as a result of improper maintenance of equipment.</p> <p>Yes</p> <p>Prerequisite Program:</p> <p>Equipment - C1.1.1</p>					
# 13 - Final Rinse and Cooling/ Dehulling - All other sprouts	<p>Physical</p> <p>Presence of hazardous extraneous material (e.g., stones, pebbles, wood, metal, glass, etc.) due to failure to remove.</p> <p>No</p>	<p>Form 9 - GAP</p>				
# 14 Removal of Water/Draining	<p>Biological</p> <p>Growth of pathogenic microorganisms due to time/temperature abuse (i.e. activity is occurring in a warm room).</p> <p>Yes</p> <p>Prerequisite program:</p> <p>Transportation and Storage - B2.1.1</p>					
# 15 Bulk Cooling	<p>Biological</p> <p>Growth of pathogenic microorganisms due to time/temperature abuse (i.e. inadequate cooling).</p> <p>Yes</p> <p>Prerequisite program:</p> <p>Transportation and Storage - B2.1.1</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

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Incoming material / process step/ hazards on schematic diagram	<p>Category and identified hazard</p> <p>Determine if fully controlled by Prerequisite Program.</p> <p>* If yes = indicate "Prerequisite Program" and proceed to next identified hazard.</p> <p>* If no = proceed to question 1 (Q1).</p>	<p>Q1. Could a control measure be used by the operator at any process step?</p> <p>* If no = not CCP. Identify how this hazard will be controlled before and after the process. Then proceed to the next identified hazard.</p> <p>* If yes = describe the measure and proceed to Q2.</p>	<p>Q2. Is it likely that contamination with the identified hazard could occur in excess of the acceptable level or could increase to an unacceptable level?</p> <p>* If no = not CCP. Proceed to the next identified hazard.</p> <p>* If yes = proceed to Q3.</p>	<p>Q3. Is this process step specifically designed to eliminate or reduce the likely occurrence of the identified hazard to an acceptable level?</p> <p>* If no = proceed to Q4.</p> <p>* If yes = CCP. Enter its number in the last column.</p>	<p>Q4. Will a subsequent step eliminate the identified hazard or reduce its likely occurrence to an acceptable level?</p> <p>* If no = CCP. Enter its number in the last column.</p> <p>* If yes = not a CCP. Identify subsequent (controlling) step and proceed to the next identified hazard.</p>	<p>CCP number</p> <p>* Proceed to next identified hazard.</p>
<p># 16 Packaging/ Labelling/ Coding</p>	<p>Biological Contamination of sprouts with pathogenic microorganisms from packaging material as a result of damage or soiling of containers/packaging material during storage. Yes Prerequisite program: Transportation and Storage - B2.1.2</p>					
	<p>Biological Failure to apply correct/legible lot code resulting in inability to recall product. Yes Prerequisite Program: Recall - F1.2.1</p>					
	<p>Chemical Contamination from inks/solvents as a result of 1) equipment that is not properly maintained and/or set up and/or 2) improper storage of inks/solvents. Yes Prerequisite Programs: 1) Equipment - C1.1.1 2) Transportation and Storage - B2.2.3</p>					
	<p>Chemical Contamination with allergens in product that is not identified to contain allergens as a result of improper operational procedures (i.e., packaging product that does not contain allergens prior to packaging product that contains allergens without a full clean-up in between). Yes Prerequisite Program: Premises - A2.1.8 Sanitation and Pest Control - E 1.1.1</p>					

HACCP Generic Model – Form 8
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# 16 Packaging/ Labelling/ Coding	Chemical Presence of undeclared allergens due to incorrect label application and/or incorrect list of ingredients (e.g., soy, sesame, wheat). No	Yes Verification of the list of ingredients to ensure the label is correct.	Yes	Yes		CCP-4C
# 17 Storage	Biological Growth of pathogenic microorganisms due to time/temperature abuse (i.e., inappropriate temperatures/humidity in storage). Yes Prerequisite Program: Transportation and Storage - B2.3.1					
	Biological Contamination of sprouts with pathogenic microorganisms due to inadequate separation from incoming ingredients and materials (e.g., seeds, packaging material, other raw products). Yes Prerequisite program Transportation and Storage - B2.3.1					
	Biological Growth of pathogenic microorganisms due to excess storage time (i.e., product stored past "Best Before" date and/or stock not rotated properly). Yes Prerequisite Program: Transportation and Storage - B2.3.1					

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	<p>Biological Contamination with pathogenic microorganisms in storage due to damaged containers resulting from: 1) improper storage procedures and/or 2) improper employee hygiene and/or handling procedures. Yes Prerequisite Programs: 1) Transportation and Storage - B2.3.1 2) Personnel - D1.1.1 and D2.1.1</p>					
#17 Storage	<p>Chemical Chemical contamination from refrigerant leak (e.g., ammonia) due to improper equipment maintenance procedures. Yes Prerequisite Program: Equipment - C1.1.1</p>					
	<p>Physical Contamination with hazardous extraneous material as a result of 1) improper storage conditions resulting in damaged containers and/or exposed product and/or 2) improper employee handling procedures resulting in damaged containers and/or exposed products. Yes Prerequisite Programs: 1) Transportation and Storage - B2.3.1 2) Personnel - D1.1.1 and D2.1.1</p>					
# 18 Shipping	<p>Biological Growth of pathogenic microorganisms due to time/temperature abuse (i.e., inadequate control of temperature of room or carrier). Yes Prerequisite Program: Transportation and Storage - B2.3.1 and B1.2.2</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

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	<p>Biological Contamination with pathogenic microorganisms as a result of loading sprouts onto a carrier that is unacceptable for the transportation of food (e.g., cleanliness of carrier, state of repair of carrier). Yes Prerequisite Program: Transportation and Storage - B1.1.1</p>					
# 18 Shipping	<p>Biological Contamination with pathogenic microorganisms due to damaged containers as a result of 1) improper loading and shipping procedures and/or 2) improper employee hygiene and/or handling procedures Yes Prerequisite Program: Transportation and Storage - B1.1.2 and B1.2.2 Personnel - D1.1.1 and D2.1.1</p>					
	<p>Biological Contamination of sprouts with pathogenic microorganisms as a result of transporting sprouts on the same carrier as non-ready-to-eat-products (e.g., raw meat). Yes Prerequisite program Transportation and Storage B1.2.2</p>					
	<p>Chemical Contamination from incompatible products or materials on the shipping trailer. Yes Prerequisite Program: Transportation and Storage - B1.2.2</p>					

HACCP Generic Model – Form 8
CRITICAL CONTROL POINTS (CCP) DETERMINATION

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	<p>Physical Contamination with hazardous extraneous material due to damaged containers as a result of 1) improper condition of transport vehicle and/or 2) improper loading and arranging procedures and/or 3) improper employee handling procedures resulting in damaged containers and/or exposed products. Yes Prerequisite Program: 1) Transportation and Storage - B1.1.1 2) Transportation and Storage - B1.1.2 3) Personnel - D1.1.1 and D2.1.1</p>					
<p>Form 4 - Plant Schematic B1 - Entrance to Germination Room and B2 - Entrance to Packaging Room</p>	<p>Biological Concentration of sanitizers in hand dips/foot dips inadequate to control pathogenic microorganisms. Yes Prerequisite Program: Premises - A2.1.8</p> <p>Biological Contamination with pathogenic microorganisms due to improper employee hygienic procedures between rooms, resulting in contamination with pathogenic microorganisms (i.e., improper use of food dips/hand dips/change of clothing). Yes Prerequisite Programs Personnel - D1.1.1 and D2.1.1</p>					

HACCP Generic Model – Form 9

Hazards Not Controlled by Operator

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

List here any **Biological, Chemical** and **Physical** hazards that are not controlled by the operator

Hazards	Indicate how the hazard could be addressed (cooking instructions, public education, “use before” date, etc.)
INCOMING MATERIALS	
<p><u>Chemical</u></p> <p>Seeds</p> <p>Presence of pesticide (including herbicides and fungicides) residues, lubricants or other industrial chemicals above maximum allowable limits.</p>	<p>Control at the farm level.</p> <p>Education in agricultural methods to encourage the use of GAP.</p>
PROCESS STEPS	
<p><u>Physical</u></p> <p># 13 Final Rinse and Cooling/Dehulling - Other seeds (besides mung beans)</p> <p>Presence of hazardous extraneous material (e.g., stones, pebbles, wood, metal, glass, etc.) due to failure to remove.</p>	<p>Control at the farm level.</p> <p>Education in agricultural methods to encourage the use of GAP.</p>

HACCP Generic Model – Form 10

HACCP Plan

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Process Steps	CCP/ Hazard Number	Hazard Description	Critical Limits	Monitoring Procedures	Deviation Procedures	Verification Procedures	HACCP Records
# 8 Antimicrobial treatment for seeds	CCP-1B	<p>Biological</p> <p>Survival of pathogenic microorganisms (i.e., <i>E. coli</i> O157:H7, <i>Salmonella</i> spp.) due to improper disinfection (e.g., inadequate concentration of antimicrobial treatment solution, inadequate contact time of seeds with antimicrobial treatment solution, inadequate agitation, inadequate volume of antimicrobial treatment solution, inadequate water temperature).</p>	<p>Antimicrobial treatment that can achieve a minimum 3 log reduction of the microbial pathogenic microorganisms of concern (i.e., <i>Salmonella</i> spp. and <i>E. coli</i> O157:H7). Example: 2000 ppm of calcium hypochlorite or sodium hypochlorite for 15–20 minutes or 6–10% hydrogen peroxide for 10 minutes.</p> <p>Seeds well agitated in large volumes of antimicrobial treatment solution, i.e., at least five times the volume of antimicrobial treatment for the amount of seeds.</p> <p>Water temperature of X as required for effective antimicrobial treatment of seeds as indicated on the label of the antimicrobial chemical.</p> <p>Fresh antimicrobial treatment solution used for each sprout lot.</p> <p>Note: Critical limits must be validated during the development of the HACCP Plan and validated at least once per year. See the following Web link to review the information on validation in the FSEP manual: http://www.inspection.gc.ca/english/fssa/polstrat/haccp/manue/tablee.shtml</p>	<p>For each batch/lot of seeds, the <i>CCP-1B Monitor</i> takes the temperature of the water using a hand held thermometer (as per <i>CCP-1B Temperature Monitoring Procedures</i>) to ensure that the water temperature meets the critical limit. <i>CCP-1B Monitor</i> mixes the antimicrobial treatment solution required as per the <i>SOP for Mixing Antimicrobial Treatment Chemicals</i> based on the weight of the batch to ensure that at least 5 times the volume of antimicrobial treatment solution is used for the amount of seeds. <i>CCP-1B Monitor</i> tests the antimicrobial treatment as per the <i>SOP for Mixing Antimicrobial Treatment Chemicals</i> to ensure the concentration meets the critical limit. <i>CCP-1B Monitor</i> then adds the antimicrobial treatment to the seeds.</p> <p><i>CCP-1B Monitor</i> agitates the seeds in the antimicrobial treatment <i>x</i> times then records the time for the start of disinfection and the completion of disinfection (or the belt speed) to ensure adequate mixing and contact time with all seeds as per the <i>SOP for Mixing Antimicrobial Treatment Chemicals</i>.</p> <p><i>CCP-1B Monitor</i> records the volume of the antimicrobial treatment solution used, the volume of water used (total</p>	<p>If the concentration of the disinfecting solution does not meet the critical limit (i.e., 2000 ppm or the hydrogen peroxide level is not 6–10%), or the water temperature does not meet the critical limits prior to use, <i>CCP-1B Monitor</i> adjusts solution and retests as per the <i>SOP for Mixing Antimicrobial Treatment Chemicals</i>. If the concentration of the antimicrobial treatment solution or the water temperature cannot be adjusted to meet the critical limits, or if the contact time, agitation or volume of the antimicrobial treatment solution is not adequate, the <i>CCP-1B Monitor</i> holds all product since the last good check as per the <i>Hold Procedures</i> and notifies <i>CCP-1B Authorized Person</i>. Records all findings, corrective actions, date and signature on <i>CCP-1B Monitoring Record</i>.</p> <p><i>CCP-1B Authorized Person</i> performs a food safety assessment as per Food Safety Assessment Procedures. If food safety has been compromised, the product is held, tested and subsequently released, reworked or destroyed. If food safety has not been compromised, the <i>CCP-1B Authorized Person</i> releases the product.</p> <p><i>CCP-1B Authorized Person</i> reviews all corrective actions to ensure they are completed and effective in controlling the deviation as well as to ensure any affected product is controlled. If any issues are identified, takes</p>	<p>Once every Y time period, the <i>CCP-1B Verifier</i> observes the <i>CCP-1B Monitor</i> to ensure the <i>CCP-1B Temperature Monitoring Procedures</i> and the <i>SOP for Mixing Antimicrobial Treatment Chemicals</i> are being followed and the critical limits are met. Signs the <i>CCP-1B Monitoring Record</i>, dates and records "observation" to indicate a procedure check was conducted.</p> <p>Once every Y time period, the <i>CCP-1B Verifier</i> reviews "X" number of <i>CCP-1B Monitoring Records</i>, and associated <i>CCP-1B Deviation Records</i>, along with corrective actions completed since the last verification to assess completeness and to ensure critical limits are met. Signs and dates.</p> <p>If deviations are found for any of the above procedures, the <i>CCP-1B Verifier</i> follows the <i>CCP-1B Deviation Procedures</i>. When the <i>CCP-1B Monitor</i> is not following written procedures, reinforcement, training or retraining will be provided.</p> <p><i>CCP-1B Authorized Person</i> collects <i>x</i> samples following the criteria set in the Health Canada's <i>Guidance for Industry: Sample Collection and Testing for Sprouts and Spent Irrigation Water</i> to assess microbiological testing of spent irrigation water and finished product to be tested for</p>	<p><i>CCP-1B Monitoring Record</i></p> <p><i>CCP-1B Deviation Record</i></p> <p><i>CCP-1B Verification Record</i></p> <p><i>Microbiological testing results</i></p> <p><i>SOP for Mixing Antimicrobial Treatment Chemicals</i></p> <p><i>Guidance for Industry: Sample Collection and Testing for Sprouts and Spent Irrigation Water</i></p> <p><i>Food Safety Practices Guidance for Sprout Manufacturers</i></p>

HACCP Generic Model – Form 10
HACCP Plan

Process/product type name: Sprouts that are grown in water: alfalfa, onion sprouts, mung beans, etc.

Process Steps	CCP/ Hazard Number	Hazard Description	Critical Limits	Monitoring Procedures	Deviation Procedures	Verification Procedures	HACCP Records
# 8 Antimicrobial treatment for seeds (cont'd)	CCP-1B (cont'd)			volume of antimicrobial treatment solution used), the weight of seeds, the agitation of the seeds and the belt speed or contact time on the <i>CCP-1B Monitoring Record</i> . Signs and dates.	immediate corrective action as described above. <i>CCP-1B Authorized Person</i> determines the root cause of the deviation to assess whether this is an isolated incident and/or whether preventative corrective actions must be developed to prevent reoccurrence. <i>CCP-1B Authorized Person</i> records the description of the deviation, the corrective action (including date completed) and preventative measures on CCP- 1B Deviation Record. Signs and dates.	microbial pathogenic microorganisms of concern 48 hours after the start of germination. Every <i>Y lots/batches of product</i> at <i>X time period</i> during the irrigation/final rinse, <i>CCP-1B</i> <i>Authorized Person</i> collects <i>x</i> <i>samples</i> of rinse water run-off (spent irrigation water) and sprouts following the criteria set in Health Canada's <i>Guidance</i> <i>for Industry: Sample Collection</i> <i>and Testing for Sprouts and</i> <i>Spent Irrigation Water</i> and sends the samples to the lab to be tested to ensure pathogenic microorganisms of concern meet the standards indicated in the FSPGSM document. <i>Records on CCP-1B Verification</i> <i>Record</i> . Received results are reviewed by the <i>CCP-1B</i> <i>Authorized Person</i> to ensure that the requirements are met as outlined in the <i>FSPGSM</i> document. Signs and dates. If results do not meet the requirements, <i>CCP-1B</i> <i>Authorized Person</i> takes the corrective actions outlined in the <i>Deviation Procedures</i> for this CCP, which are found in the <i>SOP for Mixing Antimicrobial</i> <i>Treatment Chemicals..</i>	

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Process Steps	CCP/ Hazard Number	Hazard Description	Critical Limits	Monitoring Procedures	Deviation Procedures	Verification Procedures	HACCP Records
# 11 Germination	CCP-2C	Chemical Contamination of sprouts with excess concentrations of growth regulators/plant nutrients/fertilizers and/or antimicrobial treatments due to improper chemical application.	Growth regulators/plant nutrients/fertilizer/antimicrobial treatment solutions must be mixed and added to the seeds as per the label directions for approved use, in accordance with the SOP for Mixing Growth Regulators/Plant Nutrients/Fertilizers/Antimicrobial Treatments.	For each batch/lot of seeds, the CCP-2C Monitor mixes the growth regulator/plant nutrients/fertilizer and/or antimicrobial treatment solution that is required based on the weight of the batch and the instructions on the label using the SOP for Mixing Growth Regulators/Plant Nutrients/Fertilizers/Antimicrobial Treatments. Records the volume of the growth regulator/plant nutrient/fertilizer and/or antimicrobial treatment solution used, the volume of water used (total volume of growth regulator/plant nutrient/fertilizer/antimicrobial treatment solution used), and the weight of seeds on the CCP-2C Monitoring Record and signs and dates the record.	If deviations are encountered, the CCP-2C Monitor holds all products since the last good check as per Hold Procedures. Notifies CCP-2C Authorized Person. Records all findings, corrective actions, date and time completed on CCP-2C Deviation Record. CCP-2C Authorized Person performs a food safety assessment as per the Food Safety Assessment Procedures. If food safety has been compromised, the product is held, tested and subsequently released, reworked or destroyed. If food safety has not been compromised, the CCP-2C Authorized Person releases the product. CCP-2C Authorized Person reviews all corrective actions to ensure that they are completed and are effective in controlling the deviation as well as any affected product. If any issues are identified, takes immediate corrective action as described above. CCP-2C Authorized Person determines the root cause of the deviation to assess whether this is an isolated incident and/or whether preventative corrective actions must be developed to prevent reoccurrence. CCP-2C Authorized Person records the description of the deviation, the corrective action (including date completed) and preventative measures on CCP-2C Deviation Record. Signs and dates.	Once every Y time period, the CCP-2C Verifier observes the CCP-2C Monitor performing the monitoring function to ensure the SOP for Mixing Growth Regulators/Plant Nutrients/Fertilizers/Antimicrobial Treatments is being followed and the critical limits are met. Signs the CCP-2C Monitoring Record, dates and records "observation" to indicate a procedure check was conducted. Once every Y time period, the CCP-2C Verifier reviews "X" number of CCP-2C Monitoring Records and the associated CCP-2C Deviation Records, as well as corrective actions completed since the last verification to assess completeness and to ensure critical limits are met. Signs and dates. If deviations are found for any of the above procedures, the CCP-2C Verifier follows the CCP-2C Deviation Procedures. When the CCP-2C Monitor is not following written procedures, reinforcement, training or retraining will be provided.	CCP-2C Monitoring Record CCP-2C Deviation Record SOP for Mixing Growth Regulators/Plant Nutrients/Fertilizers/Antimicrobial Treatments Food Safety Assessment Procedures Hold Procedures

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Process Steps	CCP/ Hazard Number	Hazard Description	Critical Limits	Monitoring Procedures	Deviation Procedures	Verification Procedures	HACCP Records
# 13 Final Rinse/Cooling/ Dehulling	CCP-3BC	<p>Biological Growth of pathogenic microorganisms due to time/temperature abuse as a result of delays between harvesting and final rinse and/or cooling/dehulling.</p> <p>Growth of pathogenic microorganisms due to time/temperature abuse as a result of insufficient cold water changes/changeovers during rinsing and/or use of warm water during rinsing.</p> <p>Growth of pathogenic microorganisms due to time/temperature abuse as a result of elevated water temperature, insufficient flow and/or insufficient volume to ensure water temperature remains cold and cools sprouts.</p> <p>Chemical Contamination of sprouts with excess concentrations of antimicrobial treatment due to improper rinsing (resulting in a failure to reduce concentration of antimicrobial treatment in rinse water run-off).</p>	<p>For each batch/lot of sprouts, the time from the start of harvest to the start of final rinse and/or cooling/dehulling must not exceed X minutes.</p> <p>Mung bean sprouts - A constant overflow of water out of the trough must occur. - The water temperature must be X degrees or less.</p> <p>All other seed sprouts - Water used for the final rinse and/or cooling/dehulling of the sprouts must be X degrees or less and must be changed for each rinse.</p> <p>Rinsing of the sprouts is conducted for not less than Y time period (note: may be a belt speed) with volumes and flow of water as per SOP CCP-3BC Final Rinse and Cooling/Dehulling to ensure proper rinsing of sprouts so as to reduce the concentration of the antimicrobial treatment in rinse water run-off.</p>	<p>CCP-3BC Monitor records the time at the start of the harvest and the time at the start of the cooling for each batch/lot on the CCP-3BC Monitoring Record to ensure that the critical limit is not exceeded.</p> <p>Once every Y time period, CCP-3BC Monitor takes the temperature of the water used for the final rinse as per CCP-3BC Temperature Monitoring Procedures SOP to ensure that the water temperature meets critical limits. Records all findings on the CCP-3BC Monitoring Record. Signs and dates.</p> <p>Mung beans - Once every Y time period, CCP-3BC Monitor observes the water overflowing from the trough to ensure that the critical limit is met as per the SOP CCP-3BC Final Rinse and Cooling/Dehulling. Records all findings on the CCP-3BC Monitoring Record. Signs and dates.</p> <p>All other seed sprouts - CCP-3BC Monitor changes the water for rinsing between each lot/batch of sprouts, at a minimum, and records the volume of water used. Records water changes on the CCP-3BC Monitoring Record. Signs and dates.</p> <p>CCP-3BC Monitor records the start of the rinse/cooling cycle and the finish of the rinse/cooling cycle for each</p>	<p>If deviations are encountered, CCP-3BC Monitor holds all products since the last good check as per Hold Procedures. Notifies CCP-3BC Authorized Person. Records all findings, corrective actions on CCP-3BC Record. Signs and dates.</p> <p>CCP-3BC Authorized Person performs a food safety assessment as per Food Safety Assessment Procedures. If food safety has been compromised the product is held, tested and subsequently released, reworked or destroyed. If food safety has not been compromised the CCP-3BC Authorized Person releases the product.</p> <p>CCP-3BC Authorized Person reviews all corrective actions to ensure they are completed and they are effective in controlling the deviation as well as any affected product. If any issues are identified, this person takes immediate corrective action as described above.</p> <p>CCP-3BC Authorized Person determines the root cause of the deviation to assess whether this is an isolated incident and/or whether preventative corrective actions must be developed to prevent reoccurrence. .</p> <p>CCP-3BC Authorized Person records the description of the deviation, the corrective action (including date completed) and preventative measures on CCP-3BC Deviation Record. Signs and dates.</p>	<p>Once every Y time period, CCP-3BC Verifier observes the CCP-3BC Monitor performing the monitoring function to ensure the SOP CCP-3BC Final Rinse and Cooling/Dehulling is being followed and the critical limits are met. Signs the CCP-3BC Monitoring Record, dates and records "observation" to indicate a procedure check was conducted.</p> <p>Once every Y time period, CCP-3BC Verifier reviews "X" number of CCP-3BC Monitoring Records and associated CCP-3BC Deviation Records and corrective actions completed since the last verification to assess completeness and to ensure critical limits are met. Signs and dates.</p> <p>If deviations are found for any of the above procedures, the CCP-3BC Verifier follows the CCP-3BC Deviation Procedures. When the CCP-3BC Monitor is not following written procedures, reinforcement, training or retraining will be provided.</p> <p>Every Y lots/batches of product at X time period during the irrigation/final rinse, CCP-3BC Authorized Person collects x samples of rinse water run-off (spent irrigation water) and sprouts according to the criteria set out in Health Canada's Guidance for Industry: Sample Collection and Testing for Sprouts and Spent Irrigation Water and sends the samples to the lab to be tested to ensure that the concentration of</p>	<p>CCP-3BC Monitoring Record</p> <p>CCP-3BC Deviation Record</p> <p>CCP-3BC Verification Record</p> <p>CCP-3BC Temperature Monitoring Procedures SOP</p> <p>SOP CCP-3BC Final Rinse and Cooling/ Dehulling</p> <p>Food Safety Assessment Procedures</p> <p>Hold Procedures</p> <p>Health Canada's Guidance for Industry: Sample Collection and Testing for Sprouts and Spent Irrigation Water</p>

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Process Steps	CCP/ Hazard Number	Hazard Description	Critical Limits	Monitoring Procedures	Deviation Procedures	Verification Procedures	HACCP Records
				batch of sprouts to ensure that the critical limit is met. Records on <i>CCP-3BC Monitoring Record</i> . Signs and dates.		antimicrobial treatment solution in rinse water at the end of the final rinse does not exceed Y (e.g., chlorine levels must not exceed what is allowed in the Guidelines for Canadian Drinking Water Quality) and that the microbiological testing results meet the standards indicated in the Guidance document. Records on <i>CCP-3BC Verification Record</i> . Received results are reviewed by the <i>CCP-3BC Authorized Person</i> to ensure that the standards for verification are met. Signs and dates.	

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Process Steps	CCP/ Hazard Number	Hazard Description	Critical Limits	Monitoring Procedures	Deviation Procedures	Verification Procedures	HACCP Records
# 16 Packaging/ Labelling/ Coding	CCP-4C	<u>Chemical</u> Presence of undeclared allergens due to incorrect label application and/or incorrect list of ingredients. (e.g., soy, sesame, wheat).	Correct label applied to the product. List of ingredients on the label must match the ingredients in the product.	Once every <i>Y time period</i> , <i>Monitor</i> checks the label being applied/applied to the product to ensure that: The information on the label matches the product being packaged, and the ingredient list on the label matches the product being packaged as per the <i>CCP-4C Label Check SOP</i> to ensure that the critical limits are being met. <i>CCP-4C Monitor</i> records results on the <i>CCP-4C Monitoring Record</i> . Signs and dates.	If a deviation occurs, <i>Monitor</i> stops packaging/labeling/coding and notifies <i>Authorized Person</i> . Records on <i>CCP-4C Deviation Record</i> . Signs and dates. <i>Authorized Person</i> places product and labels on hold from the last good check as per <i>Hold Procedures</i> , and performs a food safety assessment as per <i>Food Safety Assessment Procedures</i> . If food safety has been compromised, the product is held, tested and subsequently released, reworked (e.g., repackaging/relabeling correctly) or destroyed. If food safety has not been compromised the <i>Authorized Person</i> releases the product. <i>CCP-4C Authorized Person</i> reviews all corrective actions to ensure they are completed and they are effective in controlling the deviation as well as any affected product. If any issues are identified, takes immediate corrective action as described above. <i>CCP-4C Authorized Person</i> determines the root cause of the deviation to assess whether this is an isolated incident and/or whether preventative corrective actions must be developed to prevent reoccurrence. <i>CCP-4C Authorized Person</i> records the description of the deviation, the corrective	Once every <i>Y time period</i> , the <i>CCP-4C Verifier</i> observes the <i>CCP-4C Monitor</i> performing the monitoring function to ensure the <i>CCP-4C Label Check SOP</i> is being followed and the critical limits are being met. Signs the <i>CCP-4C Monitoring Record</i> , dates and records "observation" to indicate a procedure check was conducted. Once every <i>Y time period</i> , <i>CCP-4C Verifier</i> reviews "X" number of <i>CCP-4C Monitoring Records</i> and associated <i>CCP-4C Deviation Records</i> and corrective actions completed since the last verification for completeness so as to ensure critical limits have been met. Signs and dates. If deviations are found for any of the above procedures, the <i>CCP-4C Verifier</i> follows the <i>CCP-4C Deviation Procedures</i> . When the <i>CCP-4C Monitor</i> is not following written procedures, reinforcement, training or retraining will be provided.	<i>CCP-4C Monitoring Record</i> <i>CCP-4C Deviation Record</i> <i>CCP-4C Label Check SOP</i> <i>Hold procedures</i> <i>Food Safety Assessment Procedures</i>

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					action (including date completed) and preventative measures on CCP-4C Deviation Record. Signs and dates.		