CANADAGAP FOOD SAFETY MANUAL FOR GREENHOUSE PRODUCT©

Commodities covered within this Manual:
Tomatoes, Cucumbers, Peppers, Leafy Greens (including microgreens), Eggplant, Fresh Herbs and Edible Flowers

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Ottawa, Ontario, Canada K2E 7Z4

Version 6.1 **2013**

Acknowledgment

The ***CanadaGAP Food Safety Manual for Greenhouse Product*** and related materials were developed as part of the original On-Farm Food Safety Program led by the Canadian Horticultural Council with the funding and support of Agriculture and Agri-Food Canada. Effective November 1, 2012, the CanadaGAP program is operated by CanAgPlus, a Canadian not-for-profit corporation. CanAgPlus now owns, publishes and maintains the CanadaGAP manuals and related materials. The Canadian Horticultural Council is no longer involved with any publications or any other aspect of the CanadaGAP program.

Technical support for the development of this document was provided by various federal and provincial governments, regional associations and technical resources. This manual was developed by individuals from across Canada with employment or other relevant experience involving production, packing and storage of fresh food and vegetables. A list of contributors is available on the CanadaGAP website at www.canadagap.ca

Every effort has been made to ensure the material presented herein is up-to-date and accurate; however, the organizations and individuals involved in the research, development and publishing processes cannot be held responsible for any error or consequences that could result from use of this information.

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This document is intended to provide general food safety guidelines for the production and handling of horticultural products. It is not intended to serve as, and does not constitute recommendations or legal advice for any of the material contained herein. Because food safety plans and issues are evolving, may vary, and could involve legal implications, the reader should consult legal counsel for advice on particular legal or regulatory matters that may arise.

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I. Introduction

This document is intended to bring into focus the potential sources of biological (B), chemical (C) and physical (P) hazards for horticultural products from the production site through to shipping. It contains basic information to support the horticultural industry as it develops, refines and implements measures to enhance the safety of the Canadian food supply.

Many of the Good Agricultural Practices (GAPs) that are described in this Manual are already being carried out. However, in some instances very little documentation of these good practices exists. This Manual will help with the documentation of food safety practices. It is recommended that an electronic backup of the Manual is kept.

The user is responsible for implementation of the food safety program within their operation. This manual provides the toolkit to document compliance with food safety management system requirements. At all times, ownership and responsibility for the company's food safety program belongs to user, not with the CanadaGAP Program as developer of the Manual.

Senior Management Commitment to Food Safety Management System
Completion and implementation of the Food Safety Manual constitutes a commitment on the part of the person(s) responsible and the company's senior management to the development, management and continuous improvement of their food safety system.

II. Background

Horticultural products are grown, harvested and handled under a wide range of climatic conditions, using a variety of agricultural inputs and technologies (e.g., agricultural chemicals, commercial fertilizers) and on various sizes of farms. Biological, chemical and physical hazards may therefore vary significantly from one production site to another. Each production site will need to consider the GAPs that promote the safety of products, taking into account the conditions specific to the site, the type of product produced and the production methods used. Once produce is contaminated, removing or killing pathogens is difficult. Therefore, prevention of microbial contamination at all steps from production to distribution is strongly favoured over treatments to eliminate contamination after it has occurred. The individual shall consider any additional testing that may be critical to confirming product safety within his operation; and based on the risk assessment of biological, chemical and physical hazards, prepare and implement a system to ensure that product/ingredient analyses critical to the confirmation of product safety are undertaken and that such analyses are performed to standards equivalent to ISO 17025.

Procedures associated with the production, harvesting and handling of horticultural products must be conducted under clean, sanitary conditions that minimize potential human health hazards due to contamination.

The CanadaGAP Manual for Greenhouse Product has been developed based on a Generic Greenhouse Food Safety Hazard Analysis and Critical Control Points (HACCP) Model. The HACCP-based Model is the tool used to assess the potential hazards associated with the growing and packing of products and in determining areas of higher risk. The Generic HACCP Model is available for those who wish to obtain it. The Generic HACCP Model was developed according to the Canadian Food Inspection Agency's Hazard Analysis and Critical Control Point (CFIA HACCP) and Canadian On-Farm Food Safety (COFFS) Program requirements. For complete details on this program and its requirements, refer to the CFIA website at www.inspection.gc.ca.

For further background information about specific food safety hazards, please visit the Index of References on the CanadaGAP web site at: www.canadagap.ca.

CanadaGAP is committed to reviewing annually the Generic HACCP Models, which provides the technical backdrop to the requirements and procedures in the CanadaGAP Manual. Corresponding review and updates to the Manual and record-keeping templates will take place at the same time. CanadaGAP's commitment is to keep pace with advances in food safety science, and reflect new developments in industry practice, maintain the technical soundness and Canadian Government recognition status of the CanadaGAP Program materials, and ensure the continuing suitability, adequacy and effectiveness of the Generic HACCP Model and CanadaGAP Manual for implementation by users.

The person responsible and senior management of each operation using and implementing this Manual, are required to review the Food Safety Program within the company at least annually, to ensure the continuing suitability, adequacy and effectiveness of their food safety system. Section 24 requires an annual review of the CanadaGAP Manual to update procedures; account for new equipment, buildings or processes; take stock of deviations, complaints, corrective actions and any changes in procedures that arose as a result; and evaluate the need for changes to the food safety system, including related policies and objectives.

III. Scope

The CanadaGAP Manuals are intended for use by horticultural operations in Canada. They cover the production, packing (including production site packing and both on and off farm packinghouses) and storage of horticultural products. They do not cover re-packing activities although work is underway to integrate the technical standards for re-packing into the CanadaGAP Program. An integrated program will be made available in the future. For progress updates, visit the CanadaGAP website.

The CanadaGAP Manual for Greenhouse Product covers production and packing of **product for fresh market only**, not product sent for further processing.

CanadaGAP has divided the horticultural sector into the following crop groups: Fruit and Vegetable (Combined Vegetables; Leafy Vegetables and Cruciferae; Potatoes; Small Fruit; and Tree and Vine Fruit) and Greenhouse Production. Refer to the appropriate Manual(s) for the crops you produce.

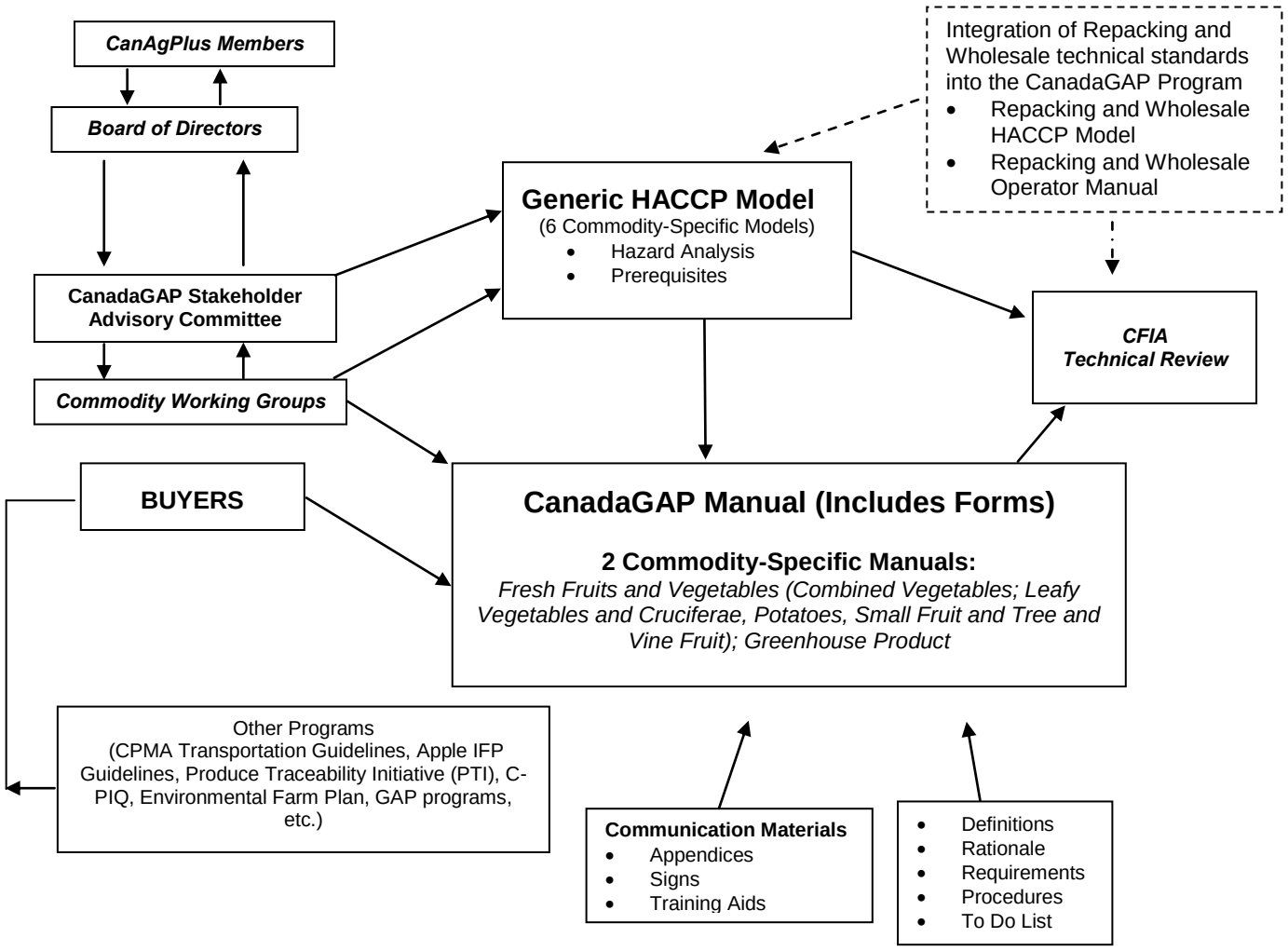
This Manual is intended for the Greenhouse production, packing and storage of:
Tomatoes, Cucumbers, Peppers, Eggplant, Leafy Greens (including microgreens), Fresh Herbs and Edible Flowers.

IV. Purpose

The CanadaGAP Manual has been created to make the contents of the Generic HACCP Model operational and commodity-specific. The purpose of this CanadaGAP Manual is to be the minimum requisite program for Food Safety (i.e., recognized national standard). Users with an existing program should review the CanadaGAP Manual for Greenhouse Product and should integrate the requirements with their existing program to form an all-encompassing/equivalent food safety system suited to their needs.

The schematic diagram on the following page provides an excellent overview of food safety initiatives within horticulture.

V. Food Safety Roadmap for Horticulture



VI. How Do I Use this Manual?

IMPORTANT NOTE	**It is very important that you read carefully the next few pages (Sections VI.i – VI.v) before proceeding to Section 1: Commodity Starter Products of the Manual, and that you refer often to the Glossary as you work through the Manual. This will help you successfully implement your CanadaGAP Food Safety program by ensuring that you have a clear understanding of how to complete the Manual and of the terms and abbreviations used.**

VI.i Food Safety Tools

The CanadaGAP Food Safety tools developed by the CanadaGAP Program include the following:

CanadaGAP Food Safety Manual and Communication Materials

The communication materials complement the manual and include items such as signs, training support aids, appendices (which provide tools/information for implementation) and any additional items/information required for CanadaGAP Program implementation. To source these communication materials, visit the CanadaGAP website (www.canadagap.ca).

VI.ii How is this Manual Organized?

The Manual is divided into two parts:

i) Sections - The Manual content is organized into sections (e.g., Premises, Transportation, Traceability, etc.). Certain sections may not pertain to all products. Entire sections that are not applicable have been clearly identified as N/A. Sections that are applicable to specific crops have been clearly identified (e.g., For Tomatoes). The sections are further divided into Requirements (food safety requirements specific to horticultural products) and Procedures (how these requirements are to be met).

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

ii) Record-Keeping Form Templates - These Forms are found at the end of the Manual in the Compendium of Food Safety Forms. Two types of record-keeping form templates exist based on the frequency of completion.
   a) Forms that need to be completed once, annually, or as changes are made to the operation.
   b) Forms that need to be completed on an ongoing basis during the season (e.g., daily, weekly, monthly).

IMPORTANT NOTE	**All applicable federal, provincial, territorial and municipal legislation and regulations must be followed. The person responsible should find out whether legislation and regulations exist in the following or other areas:** ➢ **Purchasing, applying and storing commercial fertilizers and soil amendments** ➢ **Purchasing, receiving, applying and storing pulp sludge** ➢ **Spreading and storing manure and compost** ➢ **Purchasing, applying and storing agricultural chemicals** ➢ **Purchasing tertiary water** ➢ **Disposing of garbage, recyclables and compostable waste** ➢ **Disposing of empty agricultural chemical containers** ➢ **Disposing of production wastewater and waste from toilets and hand washing facilities** ➢ **Providing personal hygiene facilities** ➢ **Controlling pests inside buildings** ➢ **Human rights, privacy and employment standards** ➢ **Drinking water standards** **Federal, provincial, territorial and municipal legislation and regulations SUPERSEDE the requirements in the manual and must be followed (e.g., Ontario regulations ask that all agricultural chemical applicators are licensed/certified, while the manual gives a choice that they are certified, trained or supervised by a licensed person. Therefore, an Ontario applicator must follow the regulations and be licensed/certified.) However, if the manual requires something that legislation or the regulations do not, then the manual must be followed (e.g., in Alberta, according to the regulations, an applicator does not have to have a license/certificate, training or be supervised by someone who is licensed. In order to follow the manual requirements, an Alberta applicator would have to do one of the above.)**

VI.iii How to Complete the Manual

The Manual can be completed independently or assistance may be sought to help address food safety requirements and concerns within the operation. The person responsible for the operation is named within this manual but it is important to note that all employees involved in a food operation have responsibility for the safe production of food. Food safety involves more than a single designated person responsible. The procedures in this manual may be carried out by a number of different individuals. Some operations may have a full- or part-time Food Safety or HACCP coordinator and/or an Food Safety team involving some or all employees. Regardless of the structure, the program will succeed only if everyone involved is aware of his or her role in achieving food safety.

Completion and implementation of the CanadaGAP Manual constitutes a commitment on the part of the person(s) responsible and the company's senior management to the development, management and continuous improvement of their food safety system. Senior management must determine and provide, in a timely manner, all the resources needed to implement and improve the processes of the food safety program and to address customer satisfaction.

The following steps must be carried out in order to complete the CanadaGAP Food Safety Program:

1. Read and complete each section of the Manual.

   When first implementing the CanadaGAP Manual, complete it section by section. Do not continue to the next section until you have completed each of the previous sections or identified outstanding items that need to be completed (use the To Do List – Outstanding Items to Complete in Manual). The Manual is not complete until all items have been checked off your To Do List. The following box appears at the end of each section. The confirmation/update log is NOT to be signed and dated (by the Food Safety Program Contact or designate) until all items have been completed in the section AND on the To Do List.

Confirmation/Update Log:

Date	**Jan 10, 2013**					
Initials	*JD*					

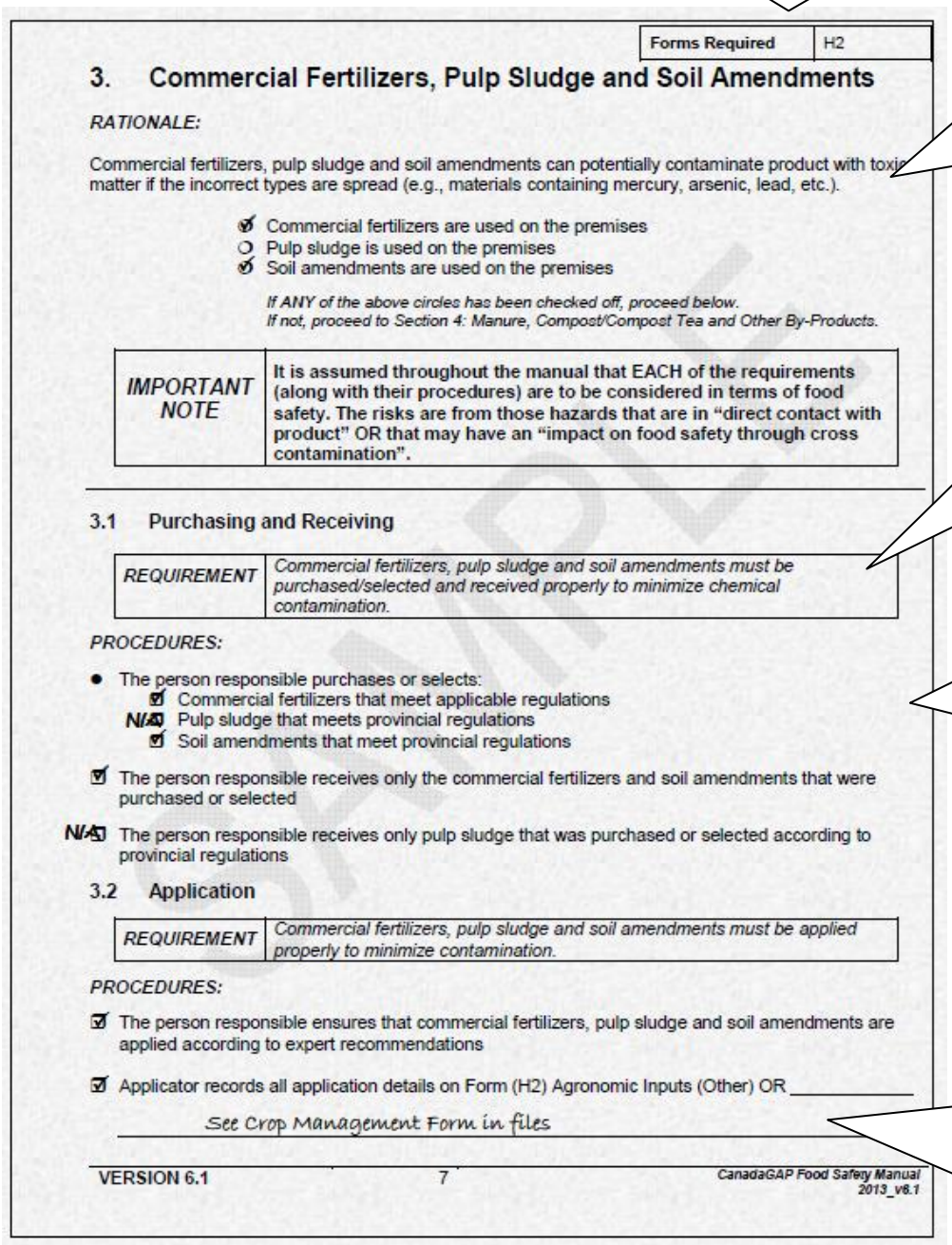
Make copies of Sections as needed, e.g., you may want to keep a clean copy and a working copy of each page.

IMPORTANT NOTE **!**	***Procedures for hazards that require both monitoring and record-keeping, as determined by the Generic HACCP Model, are marked with an exclamation mark throughout this Manual. These procedures link to the table of deviations and corrective actions in Section 23.***

The schematic diagram on the next page provides an example of how to complete the Manual.

How to Complete the Manual

Legend: The Reference box in the top right-hand corner of each section details which Form(s) are applicable to the section.



Forms Required	H2

3. Commercial Fertilizers, Pulp Sludge and Soil Amendments

RATIONALE:

Commercial fertilizers, pulp sludge and soil amendments can potentially contaminate product with toxic matter if the incorrect types are spread (e.g., materials containing mercury, arsenic, lead, etc.).

- ☑ Commercial fertilizers are used on the premises
- ○ Pulp sludge is used on the premises
- ☑ Soil amendments are used on the premises

If ANY of the above circles has been checked off, proceed below.
If not, proceed to Section 4: Manure, Compost/Compost Tea and Other By-Products.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

3.1 Purchasing and Receiving

REQUIREMENT	*Commercial fertilizers, pulp sludge and soil amendments must be purchased/selected and received properly to minimize chemical contamination.*

PROCEDURES:

- The person responsible purchases or selects:
  - ☑ Commercial fertilizers that meet applicable regulations
  - N/A Pulp sludge that meets provincial regulations
  - ☑ Soil amendments that meet provincial regulations

☑ The person responsible receives only the commercial fertilizers and soil amendments that were purchased or selected

N/A The person responsible receives only pulp sludge that was purchased or selected according to provincial regulations

3.2 Application

REQUIREMENT	*Commercial fertilizers, pulp sludge and soil amendments must be applied properly to minimize contamination.*

PROCEDURES:

☑ The person responsible ensures that commercial fertilizers, pulp sludge and soil amendments are applied according to expert recommendations

☑ Applicator records all application details on Form (H2) Agronomic Inputs (Other) OR _____

See Crop Management Form in files

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Rationale: Provides the person responsible with background information appropriate to each section.

Requirement: Outlines the actions and activities that must be followed in the operation.

Procedures: Describes how the person responsible is to fulfill the requirements in each section.

Certain **sections allow for you to provide details** on methods or procedures used in your operation. Please provide as much detail as possible.

There are **circles** (❍) at the beginning of each section to check (✓) if the section pertains to your operation.

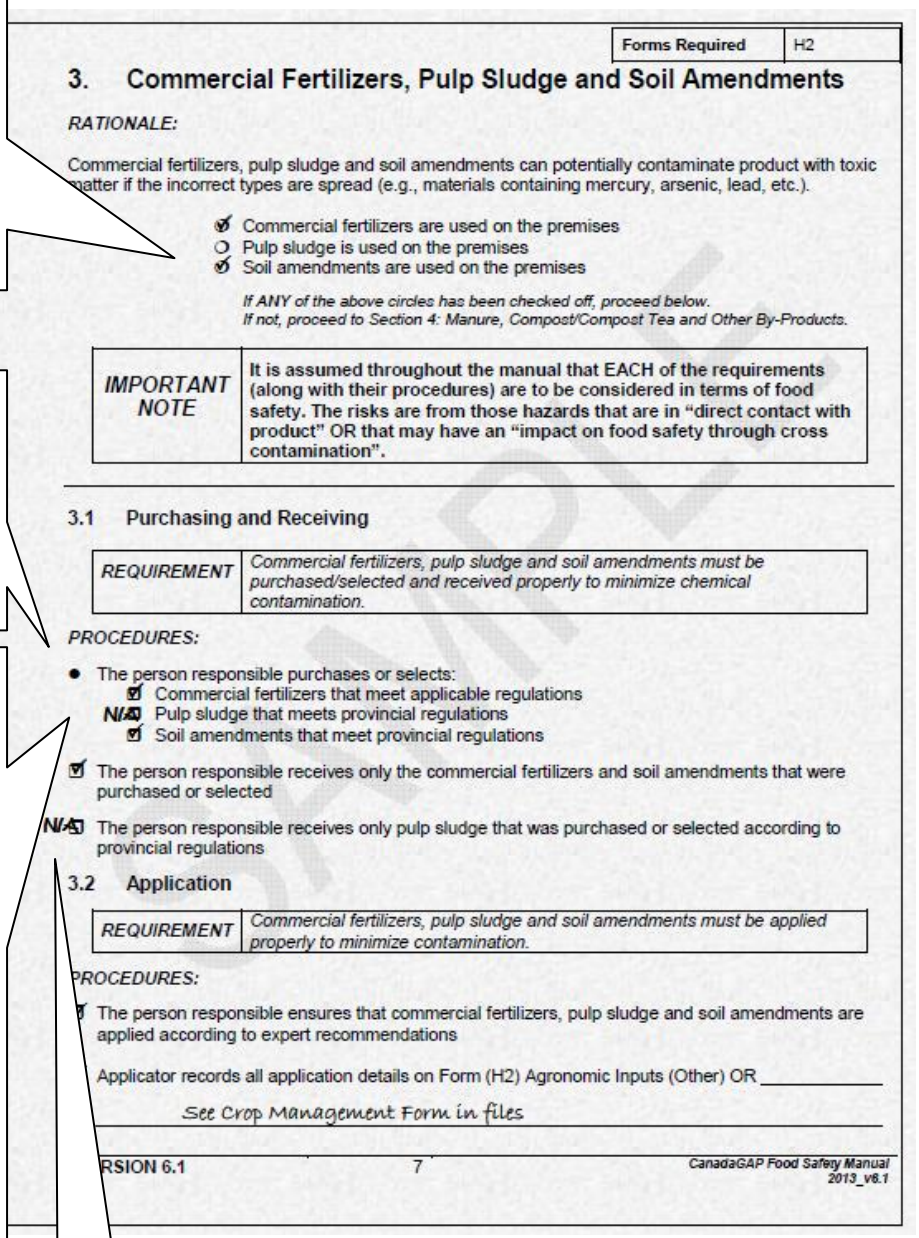
If the section does not pertain to your operation, leave the circle blank and follow the instructions to proceed to the next relevant section. The entire section can be left blank, including all check boxes (❒) within the section.

Solid circles (●) are used to introduce general procedures that may have several components. You do NOT need to check off solid circles (●). Each **component step** is listed below the general statement and is introduced with a box (❒) to check off (✓).

Every **check box** (❒) in the Manual must be completed, unless the entire section does not apply to your operation. Check (✓) all boxes (❒) unless there is an option indicating otherwise. When you check a box this indicates that you have understood and properly completed the requirement(s). If additional pages are required, make copies of the applicable sections, complete and add to the relevant section (e.g., if you have more than one water source, multiple storages).

If you do not check a box, you are not following the required GAP. You must make the necessary changes, additions, etc. to your operation. Once this has been completed, you can check off the box.

Arrow bullets (➢) are suggestions only and do not need to be checked.



Forms Required	H2

3. Commercial Fertilizers, Pulp Sludge and Soil Amendments

RATIONALE:

Commercial fertilizers, pulp sludge and soil amendments can potentially contaminate product with toxic matter if the incorrect types are spread (e.g., materials containing mercury, arsenic, lead, etc.).

- ☑ Commercial fertilizers are used on the premises
- ❍ Pulp sludge is used on the premises
- ☑ Soil amendments are used on the premises

If ANY of the above circles has been checked off, proceed below.
If not, proceed to Section 4: Manure, Compost/Compost Tea and Other By-Products.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

3.1 Purchasing and Receiving

REQUIREMENT	*Commercial fertilizers, pulp sludge and soil amendments must be purchased/selected and received properly to minimize chemical contamination.*

PROCEDURES:

- The person responsible purchases or selects:
  - ☑ Commercial fertilizers that meet applicable regulations
  - N/A ❒ Pulp sludge that meets provincial regulations
  - ☑ Soil amendments that meet provincial regulations

☑ The person responsible receives only the commercial fertilizers and soil amendments that were purchased or selected

N/A ❒ The person responsible receives only pulp sludge that was purchased or selected according to provincial regulations

3.2 Application

REQUIREMENT	*Commercial fertilizers, pulp sludge and soil amendments must be applied properly to minimize contamination.*

PROCEDURES:

☑ The person responsible ensures that commercial fertilizers, pulp sludge and soil amendments are applied according to expert recommendations

Applicator records all application details on Form (H2) Agronomic Inputs (Other) OR _____

See Crop Management Form in files

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If the procedure is not applicable to your operation, **write N/A** through the box (❒).

If deviations from a procedure occur (e.g., non-compliance, incompletion), refer to Section 23: Deviations and Crisis Management for the appropriate corrective action.

IMPORTANT NOTE	The CanadaGAP program consists of a food safety "standard" – that is, **requirements** that must be met to ensure product is produced, packed and stored safely. The main documents for users are the CanadaGAP manuals, which identify the general requirements of the standard, and detail the procedures that will fulfill those requirements. The manuals provide a toolkit and a "shortcut" to users, to help them *document the practices* that will meet the CanadaGAP standard within their operation. This level of specificity was desired to better assist users with implementing the program requirements, and to improve consistency in user and auditor interpretation of the standard. Each section of the CanadaGAP manuals contains these two parts: *Requirements* (WHAT general actions and activities are needed to achieve food safety) and *Procedures* (HOW in specific terms these requirements are to be met). If the operation does not fulfill the requirements and follow the procedures, then they have not yet successfully implemented the CanadaGAP program. The requirements along with their procedures were determined based on food safety risks that may be present in an operation. If the hazards are not controlled, there is potential for contamination of the product. To mitigate the risks the procedures need to be followed. However, deviations from these procedures are possible and may be acceptable in completing the requirement. There may be a variety of ways to meet the requirements and still mitigate risk. An operation may choose to implement different procedures than those contained in the manual and these *may* be acceptable to satisfy program requirements. A risk assessment would need to be completed (see *Appendix U: Introduction on How to Assess Risk - with examples*). Procedures would need to be carefully developed to ensure the hazards are controlled, and thoroughly documented to ensure the procedures are followed consistently. If this approach is taken the effectiveness of those procedures will have to be assessed during an audit. It will be up to the certification body to determine if procedures different from those provided in the manuals are acceptable or not.

2. Complete each applicable record found in the Compendium of Food Safety Forms (or your own equivalent records).

   When you are asked to complete a Form, remove the template from the Compendium of Food Safety Forms and follow the instructions. Do not continue to the next section until you have completed each of the required Forms. The Forms are proof of activities performed. Make additional copies of these Forms as necessary and complete Page __ of __ where applicable to indicate that more than one page is used.

   Annual Forms: For those Forms that are to be completed on an **annual** basis, the person responsible (or Food Safety Program Contact or designate) must sign and date the log at the bottom of the Form. **EXAMPLE:**

   The following box appears at the bottom of Forms completed annually. Each year the person responsible (or Food Safety Program Contact or designate) must review the annual Forms, update them as needed, sign and date the log:

Confirmation/Update Log:

Date	**Jan 10, 2013**					
Initials	*JD*					

Ongoing Forms: For those Forms that are completed on an **ongoing** basis (e.g., daily, weekly, monthly), once the Form has been completed or is full, the person responsible (or Food Safety Program Contact or designate) must confirm that the Form was completed accurately and that all requirements were met by signing and dating the bottom of the Form.

EXAMPLE:

The following appears at the bottom of Forms that are completed on an ongoing basis.

Confirmation Signature: *John Doe* ***Date:*** ***January 10, 2013***

IMPORTANT NOTE	**If you have existing forms, separate records or other methods of documentation, you may use these instead (e.g., custom applicator documents, invoices, receipts); ensure they contain all of the same information as the template forms in this Manual.** **A space has been left at the end of each line requiring the completion of a Form (i.e., complete Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____ _____). The space is for you to document what the other method/form may be and where the documentation can be found. This is important if anyone would like to see your program (e.g., auditors). You may also modify the Forms in any way you like so they meet the needs of your operation, as long as they contain all of the relevant information (e.g., if a Form states it is for EACH production site you may use it for ALL production sites).** ***Refer to Appendix P -- Customizing Record Keeping Forms.***

3. Perform an annual review.

   The person responsible must review and update each section of the Manual annually. The person responsible (or Food Safety Program Contact or designate) signs off and dates the Confirmation/Update log found at the end of each Section as it is reviewed. **EXAMPLE:**

Confirmation/Update Log:

Date	**Jan 10, 2013**					
Initials	*JD*					

VI.iv Form Retention

All Sections (1-24), Forms, receipts, letters of assurance and certificates must be kept for a minimum of two years for audit, recall or other purposes.

At least three months of records prior to the date of the initial audit are required for those seeking CanadaGAP Program Certification.

VI.v Food Safety Manual Document Control

Changes to the Manual will occur as a result of new science, emerging pathogens, new hazards, legislative requirements and changes in practices on the farm. Therefore, document control is necessary to ensure that all documentation is properly updated and maintained, ensuring each and every page is current.

The CanadaGAP document control box is located in the footer of each page. As CanadaGAP updates the Manual content, the document control box will also be updated. The indexes will also be updated and reissued. If pages are added, an alphanumeric system will be used (e.g., if page 18 requires an additional page, the format of 18a, 18b, etc. will be used). **EXAMPLE:**

Annual updates will be posted on the CanadaGAP web site at www.canadagap.ca.

Glossary

Accredited laboratory: One whose accreditation has been obtained from an accrediting body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) MRA (mutual recognition agreement), using the internationally recognized criteria and procedures outlines in ISO/IEC 17025: (General requirements for Competence of Calibration and Testing Laboratories).There are two accreditation bodies in Canada which are the Standards Council of Canada and the Canadian Association of Laboratory Accreditation.

Adjacent: Refers to areas across from or beside the production site.

Agricultural activities: Livestock and crop production, processing activities, etc.

Agricultural chemicals: A subset of pest control products used to control crop pests such as insects, diseases and weeds (e.g., pesticides such as herbicides, fungicides and insecticides).

Agricultural water: See “Water”.

Agronomic inputs: Include agricultural chemicals, biological controls, pollinators, commercial fertilizers, compost, cover crops/green manure, manure (livestock waste), mulch and row cover materials, other by-products, soil amendments and pulp sludge.

Animal and bird activity: Includes activity from both wild and domestic animals and birds.

Bait: Anything intended to attract, tempt or kill pests. It may NOT be used in the interior of buildings unless inside a trap.

Biannually: Twice a year.

Biological controls: The use of beneficial species, such as predatory and parasitic insects, nematodes or disease organisms to suppress populations of pests.

Biosolids: The material, predominantly organic in nature, resulting from treatment of industrial sewage, municipal sewage and septic system waste.

Building: Any structure where product is handled and/or stored, and any structure where market ready packaging materials, agricultural chemicals, commercial fertilizers, etc. are stored (e.g., packinghouse, storage areas, service area, boiler room, etc.).

Building equipment: Used in the packinghouse or storages (e.g., scales, baggers, conveyors, hoppers, tables, pallets, forklifts, curtain doors, packing, washing, treating, drying, grading, sorting and handling equipment).

Calibration: Determination of the accuracy of an instrument, usually by measurement of its variation from a standard, to ascertain necessary correction factors.

Cargo area: The part of the vehicle that is intended to transport product (e.g., wagon, trailer, box).

CCP: Critical Control Point; a step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Certified applicator: A person who has successfully completed a voluntary or mandatory certification course, paid the certification fee and may apply agricultural chemicals.

CFIA: Canadian Food Inspection Agency.

Chlorine: A chemical element that is widely used for disinfection, water purification and cleaning.

> **Total chlorine**: is the total amount of chlorine that has been used e.g., 1 cup/250 mL, 2 tsp/10 mL Measuring total chlorine is most useful when determining and checking how much chlorine to start with. 50-150 ppm is recommended for fresh fruit and vegetable applications. (*See Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example.)*
>
> **Free chlorine**: is the amount of chlorine (from the total chlorine) that remains active when used. Measuring free chlorine is a much more accurate way of monitoring the effectiveness of a chlorination system over time. 2-7 ppm is recommended. (*See Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example.)*

Chemigation: The application of agricultural chemicals and/or biological controls through the irrigation system (using agricultural water).

Cistern: A container for collecting or holding water (e.g., well water in a tank, delivered commercial water, a tank for catching rainwater).

Cleaning materials: Products used to clean, sanitize or disinfect (e.g., cleaning agents, water treatment chemicals, sanitizers, brushes, scrubbers).

Cleaning water: See "Water".

CPMA: Canadian Produce Marketing Association.

Commercial fertilizers: Substances containing one or more recognized plant nutrients that are designated for use in promoting plant growth.

Commodity Starter Products: Beginning materials used to produce a product such as seeds, seedlings, plants, cuttings, canes, seed potatoes, nursery stock, etc.

Compost: Solid mature product resulting from a managed process of bio-oxidation of a solid heterogeneous organic substrate including a thermophilic phase. *(**Note**: Follow provincial/territorial guidelines for procedures to compost plant debris, dead stock, animal excrement, etc.).* For further information, see *Appendix C -- Composting Livestock Manure – An Example and Compost Tea Information* for an example of a general procedure to compost animal excrement.

Compost tea: A liquid solution made by steeping compost (produced properly by a managed process that includes a thermophilic phase) in water. It is used as both a fertilizer and a spray to control plant disease. For further information see *Appendix C -- Composting Livestock Manure – An Example and Compost Tea Information*.

Compostable waste: Organic matter that will decay over time, is NOT compost and requires disposal.

Contamination: Infection or pollution with biological, chemical or physical substances.

Controlled-access area: An area that only authorized persons are allowed to enter (e.g., packing area, storage area for packaging materials or product).

Corrective action: An organized activity to fix a problem.

Crisis management: The act or practice of dealing with a crisis when it develops.

Curtain doors: Plastic strips that cover an entrance/opening.

Deviation: An alteration from the standard.

Drip irrigation: A low-pressure method of directing agricultural water to the root zone of the plant, with or without commercial fertilizers and/or agricultural chemicals.

Earliest Allowable Harvest Date (EAHD): The date on or after which product can be harvested; this date takes into consideration the agricultural chemical application date, and PHI (e.g., if an agricultural chemical has a PHI of 21 days and it was applied on June 1st, then the EAHD would be June 22nd) and the 120 days between manure application and harvest (e.g., if manure is spread on April 1st the product can not be harvested until August 1st).

E. coli: A bacterium (*Escherichia coli*) normally found in the animal and human gastrointestinal tract and existing as numerous strains, some of which are responsible for diarrheal diseases.

Employee: A person who works in return for financial or other compensation and/or who works in direct contact with the product or may have an impact on food safety through cross contamination.

Fertigation: The application of commercial fertilizers through the irrigation system (using agricultural water).

Fertilizers Act: A federal Act that regulates some commercial fertilizers imported into or sold in Canada.

Final rinse water: See "Water".

First Aid Kits: Must include bandages to cover wounds.

Fluming water: See "Water".

Food contact surface: Surface where unpackaged product may touch (e.g., conveyor belt, grading table, equipment, knife, harvest cup, cutting surface, cargo area of a vehicle).

Free Chlorine: See "chlorine".

Generic: Applies nationally to all operations involved in the production, packing and storage of a commodity.

Generic HACCP Model: Applies nationally to all operations involved in the production, packing and storage of a commodity, and involves conducting a hazard analysis for all steps that results in the GAP's reflected in the CanadaGAP Manual.

Glue boards: Larger versions of sticky traps. They are made of cardboard or plastic, coated with extremely strong, sticky glue. They are used for monitoring and control of rats and mice.

Good Agricultural Practices/Good Production Practices (GAP's/GPP's): General steps, measures or procedures that control the operational conditions within a production, packing and/or storage unit allowing for the environmental conditions that are favourable to the production of safe food.

Grading: Categorizing or separating product by size, colour or quality (i.e., into pre-determined grades).

Greenhouse: Enclosed structure that includes the production site(s) and buildings.

Ground water: See “Water”.

Grower Requested Own Use Program: A program managed by the Pest Management Regulatory Agency that allows operations to import the US version of Canadian-registered pest control products for their own use should they be available in that market at a lower price. More information can be found at: www.hc-sc.gc.ca.

Growing: The development and maturation process of product that occurs in the production site and ends at harvest.

Growing medium: Material in which seeds and plants can grow (e.g., soil, peat, water, rockwool, etc.).

HACCP: Hazard Analysis Critical Control Points; a system that is science-based and systematic and identifies specific hazards and measures for their control to ensure the safety of food. HACCP is a tool to assess hazards and establish control systems that focus on prevention rather than relying on end product testing.

HACCP-based program: A food safety program based on HACCP principles in which the hazard analysis conducted is generic (i.e., covers all of the operations in a given commodity sector) and results in a list of commonly accepted hazards and related controls, which are then translated into a series of good agricultural practices to which primary operations adhere.

HACCP program: An operation-specific (e.g., ABC farm’s HACCP plan) hazard analysis applying HACCP principles and resulting in a site-specific HACCP plan. The hazard analysis conducted results in the identification of specific farm/packinghouse/storage hazards and related controls, which are then translated into a series of good production practices to which the operation adheres.

Hand sanitizer: Waterless, antibacterial liquid or gel used to disinfect hands.

Hand washing facilities: May include hand sanitizers, water, soap, paper towel and hand wipes.

Hand wipes: Pre-moistened (by the manufacturer) disposable towels used to remove organic matter from hands (e.g., dirt, mud, product juice, suntan lotion, cream, food, saliva, etc.).

Harvested product: Produce that has **not** been put into **market ready** packaging materials.

Harvested product packaging materials: Containers used or reused in the production site to hold produce before it is transferred into **market ready packaging materials**. Include bins, crates, totes, lugs, baskets, bags, etc.

Harvesting: The physical act of moving the product from the production site (e.g., separating it from the plant, taking it out of water, etc.), which can be done either manually or mechanically.

Hazard: A biological, chemical or physical agent in, or condition of, food having the potential to cause an adverse health effect.

Hazard analysis: A comprehensive analysis of all the steps in a production system in accordance with HACCP principles in order to determine hazards, develop a HACCP model and elaborate controls for each hazard.

Holding: Keeping product in a non-temperature controlled (ambient) environment for a few minutes to a few days.

IFP: Integrated Fruit Production; a systems approach to fruit production that promotes sustainable agriculture practices to produce optimal yields of high-quality fruit while protecting the environment.

Input: Anything needed to produce a crop.

Inspect: To examine carefully and critically.

IPM: Integrated Pest Management; a decision-making process that uses all necessary techniques to suppress pests effectively, economically and in an environmentally sound manner.

Labelling: The physical act of putting information on or with product (e.g., attaching pallet/bin tags, stickering, colour coding, numbering, lettering, etc.) to identify it for traceability, as per requirements within Section 17 and 22

Letter of assurance: A written statement from a supplier/dealer that the product he or she is selling was produced under specified conditions and steps were taken to reduce biological, chemical or physical contaminants in accordance with all applicable legislation.

Letter of no objection: Letter expressing favourable opinion by the regulatory body (e.g., CFIA, Health Canada). Indicates that the product can be sold in Canada for the uses listed in the submission, and outlines any restrictions or requirements relative to the regulatory body's decision.

Licensed applicator: A person who has successfully completed the applicators' course, paid the licensing fee and may apply agricultural chemicals.

Licensed dealer: A person who has successfully completed the dealers/dispensers course, paid the licensing fee and may sell agricultural chemicals.

Lot: Product packed during a period of time or according to a specific ID.

Lot ID: Any combination of letters OR figures, or letters AND figures, by which a unit of market product can be traced and identified in the operation's records (e.g., skid, block, box). Linked to Pack ID for complete traceability.

Maintenance materials: Products used on, or to repair, equipment and buildings (e.g., light bulbs, lubricants, oils, fuels).

Major deviations: Deviations from procedures and the intent/plan of the food safety program that could lead to a major food safety concern; employees must advise the person responsible immediately of the problem (see Section 23: Deviations and Crisis Management for a list of major deviations).

Manure: Animal excrement with or without bedding that has not been composted and is used to fertilize the soil. Includes all types (e.g., cow, sheep, horse, pig, chicken, etc.) as well as aged manure.

Market product: Produce that is in market ready packaging materials. It may be packed in the production site and/or in the packinghouse.

Market ready packaging materials: Containers that **will go to food service, retail, re-packing, or directly to the consumer**. These containers may first go through other facility(ies) (e.g., shipper, broker, marketer, handler, wholesaler, distributor/distribution centre, etc.) where further activity may occur (e.g., icing, cooling, labelling/coding, etc.) before product reaches food service, retail, repacking or the consumer.. The product does not leave these containers until it is either taken out by the consumer or by the food service, re-packing or retail operation.

There are two types:

1) Market ready **PRIMARY** packaging materials that come into direct contact with product (e.g., clamshells, bags, boxes, baskets, crates); and
2) Market ready **SECONDARY** packaging materials (e.g., masters) that may be reused and do not come into direct contact with product.

Minor deviations: Deviations from procedures and the intent/plan of the food safety program that can be rectified immediately by the employee and that are not a major food safety concern (e.g., spilled product on the floor).

Mock recall: A procedure to test the recall team's ability to find and trace their product during a recall

Municipal water: See "Water".

Non-agricultural activities: Dump sites, industrial activities and other human activities (e.g., golf course).

Non-porous surface: A smooth solid surface that limits absorption and penetration of liquid (e.g. metal, stainless steel, hard plastic material, rubber).

Off-site: Beyond the premises of the operation.

On-site: Within the premises of the operation.

ORP: Oxidation-Reduction Potential. A rapid and accurate way to measure chlorine effectiveness. ORP is measured using an ORP meter, similar to a digital thermometer or pH probe. Research has shown that water with an ORP value of 650-700 mV can kill bacteria such as *E. coli* in a few seconds while more resistant types of microorganisms are killed within a few minutes.

Other by-products: Include plant or animal debris used for soil and crop improvement (e.g., seafood waste, seaweed, peat moss, wood shavings, crop culls, cover crops/green manure, pomace, teas, feather meal for chicken rendering), i.e. to improve the biological, chemical and physical characteristics of the soil, including improving the tilth, porosity, aeration, aggregation, water holding potential, or to increase the organic content, ion exchange capacity and microbial viability.

Own Use Import Program: Allows the import of registered foreign pest control products, provided they are deemed to be chemically equivalent to registered Canadian pest control products are on the eligibility list and have received a permit from the PMRA. They also must bear the equivalent label information to that of the registered Canadian pest control product. Information can be found at www.pmra-arla.gc.ca.

Pack ID: Information identifying 1) who produced the product and 2) when the product is packed. Linked to Lot ID for complete traceability.

Packaging accessories: Materials used to fasten, contain, protect or identify product or packaging materials (e.g., liners, ties, tags, labels, elastics, rope, trays, dividers, slats, staples, ink, stickers, and wrap such as shrink wrap, pallet wrap or mesh/net).

Packaging materials: Include all containers and packaging accessories used for harvested and market product.

Packing: Includes:

1) The physical act of taking harvested product and putting it into harvested product packaging materials AND/OR market ready packaging materials for the first time (both in the production site and in the packinghouse). This does not include re-packing
2) Activities (e.g., icing, labelling/coding, cooling, etc.) that occur once product is in the packaging materials.

The operation involved with packing may or may not store and/or transport packed product.

Packinghouse: Where the packing activities occur

Person Responsible: The one(s) who carries out an activity (e.g., harvesting, packing, storage, cooling, icing, labelling/coding, transporting, etc.) and ensures that the activity within his or her control is complete.

Personal effects: Include employees' lunches, clothing, shoes, smoking materials, etc.

Personal hygiene facilities: Washrooms (i.e., toilets, toilet paper) and hand washing facilities (i.e., hand sanitizers, water, soap, paper towel and hand wipes). These may be located inside or outside and can be portable or non-portable.

Pest: an animal, plant or other organism that is directly or indirectly injurious, noxious or troublesome, and an injurious, noxious or troublesome condition or organic function of an animal, a plant or other organism (e.g., rats, mice, birds, reptiles, beetles, weeds, disease, etc.).

Pest control product: Any product, device, organism, substance or thing that is manufactured, represented, sold or used as a means for directly or indirectly controlling, preventing, destroying, mitigating, attracting or repelling any pest. Control products include active ingredients used in the manufacture of end-use products and the end-use products themselves. Includes herbicides, insecticides, fungicides, antimicrobial agents, pool chemicals, microbials, material and wood preservatives, animal and insect repellents, and insect- and rodent-controlling devices.

Pest Control Products Act (PCP Act) and Regulations: A federal Act that enables the Pest Management Regulatory Agency (PMRA) to regulate all pest control products imported into, sold or used in Canada.

Pest Management Regulatory Agency (PMRA): Federal body responsible for administering the legislation under the *PCP Act*.

Pest program: Includes the control and monitoring of pests.

pH: A measure of acidity or alkalinity.

PHI: Pre-harvest interval; the time between the application of the agricultural chemical and harvest, as defined on the pest control product label.

pH meter: A device used to measure pH.

Potable water: See "Water".

Pre-cooling: Reducing temperature of product prior to storage (i.e., removing heat). Includes forced air and vacuum cooling. Does not include ice or hydro-cooling.

Pre-planting: Time from harvest of prior crop to beginning of planting the current crop.

Premises: Includes production site(s), building(s) and immediate surrounding land.

Preventative measures: Actions taken that are intended to hinder or avert.

Prior to Use (for water testing)**:** Before the water is used on product, hands, equipment, packaging materials, etc. for the first time in a season. Results of water testing need to show potability before water is used.

Product: Refers to both harvested and market produce.

Production: Activities (e.g., growing, harvesting, putting harvested product into harvested product packaging materials, cooling, rinsing, etc.) involved with harvested product. The production operation may or may not store and/or transport product.

Production site: Location where product is grown (i.e., the growing area of the greenhouse).

Production site equipment: Equipment used in the growing area (e.g., sprayers, foggers, carts, tractors, ladders, irrigation lines).

Production wastewater: Water remaining from the cleaning of product or equipment (e.g., flume, dump tank or wash water).

Purchasing: Buying or ordering a product.

Recall: Means for an operation to remove from further sale or use, or to correct, a marketed product (i.e., that has been sold or distributed) that may have an impact on food safety.

Receiving: Taking delivery of a product or an input that was purchased and/or selected.

Recyclables: Containers from maintenance materials, agricultural chemicals, commercial fertilizers, cleaning agents or water treatment chemicals, etc.

Re-circulated water: See “Water”.

Registered agricultural chemicals: Refers to products that have been approved under the *PCP Act* and that bear a Pest Control Products Number (PCP #).

Releasing: Handing product over to another operation that is responsible for the next activity/function (e.g. labelling, icing, storing), whether the product is purchased or not

Re-packing: Removing market product from its market ready packaging materials, re-handling the product (e.g., re-sorting, re-grading, re-trimming, re-washing, re-fluming, etc.) and putting it into market ready packaging materials. Product may also be co-mingled with other product. These activities are NOT covered under this program.

Reservoir: A natural or artificial pond or lake used for collection or storage of water.

Sanitary dip: Container with water and sanitizer (e.g., chlorine, quaternary ammonium, etc.).

Selecting: Obtaining or sourcing a product where it is not purchased (e.g., choosing a water source, building your own equipment).

Separate: Not on top of, underneath or touching.

Sewage sludge: Includes all biosolids.

Soap: Cleaning agent used with water. Can be antibacterial or other.

Soil amendments: Ashes, gypsum and liming materials added to the soil for the purpose of improving the chemical properties (e.g., pH) of the soil. If liming materials are derived from biosolids, see requirements for sewage sludge/biosolids. If liming materials are derived from pulp and paper waste, refer to the requirements for the application of pulp sludge.

Sorting: Separating product (e.g., edible from non-edible; removing leaves, stones, other plant debris).

SSOP: Sanitation Standard Operating Procedure; specific sanitation practices that include detailed cleaning instructions *(refer to Appendix N -- Sanitation Standard Operating Procedures (SSOP) – An Example)*

Sticky traps: Devices used to monitor or control crawling insects/pests. Sticky traps for insects are made of heavy paper or cardboard coated with a non-repellent, sticky glue. Insects that crawl over the trap are held fast by the glue. In dusty sites, these traps may need to be replaced weekly to maintain effectiveness. To prevent dust from coating sticky traps, they can be placed inside open-ended tubes that allow pests access.

Storage: Keeping product in a pre-determined and controlled environment for a period of days to months (e.g., cooed, atmosphere controlled or modified; cooled, dry, contained location); or the location where product is kept.

Surface water: See “Water”.

Temperature conditioning: (Pre) cooling.

Tertiary water: See “Water”.

Total Chlorine: See “chlorine”.

Total Coliforms: A measurement of several bacteria belonging to the family Enterobacteriaceae spp., including *Escherichia coli* (*E. coli*) and various members of the genera Enterobacter spp., Klebsiella spp. and Citrobacter spp. These bacteria are typically found as a part of the intestinal microflora of warm-blooded animals and so are associated with fecal material. In addition, some members of this group of organisms can originate from nonenteric sources.

Traceability: Permits the source of the product to be identified and maintained at any stage in the supply/distribution system.

Training: The transfer of technical and/or food safety-related information to employees. Employees include offshore, local, seasonal, part-time and management personnel. Training may take a variety of forms including on-the-job demonstrations, job shadowing, formal sessions, reading and discussing protocols or presentations.

Transportation: Includes all movement of product, both on and off the premises.

Traps: Devices (baited or not) that pests enter and are unable to escape from. These may be used in the interior and exterior of buildings.

Vehicles: The means to transport product (e.g., personal and private carriers, trucks, flatbeds, wagons).

Visitor: Includes anyone not directly involved/employed in the operation (e.g., transportation drivers, contractors, auditors). Visitors are ONLY considered when entering controlled access areas.

Washrooms: Includes toilets and toilet paper.

Wash water: See "Water".

Waste: Refers to any item or material requiring disposal (i.e., garbage).

Water:

Agricultural water: Water used for irrigation, the application of agricultural chemicals and commercial fertilizers and for growing floating/living lettuce/herbs.

Cleaning water: Includes all water except for agricultural water and is used for fluming, washing and rinsing product. It also includes water used to wash hands in hygiene facilities and for cleaning equipment, harvested product packaging materials, buildings, etc.

Final rinse water: Water used in the final step of the cleaning process that covers all surfaces of the product (i.e., high volume spray/shower that drenches the entire product).

Fluming water: Water used for transporting product or for the initial step of the cleaning process.

Ground water: Water beneath the earth's surface, often between saturated soil and rock that supplies wells and springs.

Municipal water: Water supplied by the local government that is potable.

Potable water: Water that meets the parameters under the Canadian Water Quality Guidelines for Drinking Water Quality (i.e., biological parameters are 0 total coliform and 0 *E. coli*).

Re-circulated water: Water that is being reused.

Surface water: Water that is exposed to the environment [e.g., ponds, streams, lakes, rivers, canals, creeks, dugouts, rain (e.g., collected from the roof)].

Tertiary water: Waste water (e.g. municipal, industrial) that has received the third, or final, stage of water treatment. Primary treatment screens particulates and settles sludge in ponds. Secondary treatment removes harmful microorganisms and tertiary treatment passes the water through filters to remove organic pollutants that bacteria cannot break down. Tertiary treatment also uses chemicals to remove chemical pollutants such phosphorous and nitrogen.

Wash water: Water used during the cleaning process to remove organic material from product (e.g., dump tanks, pits, sprays, drums), unless this is the last water used on the product before it leaves the premises (if so – consider this as "Final rinse water").

Water sources: Ground, surface, municipal or tertiary water.

Water storage: Water that is held temporarily in a closed container/tank/cistern. This includes water in coolers or jugs with a spigot, delivered municipal water stored in a tank, water put into backpack sprayers, a cistern/reservoir containing rainwater, water tank filled with well water, well water in a standalone handwashing tank/container etc.

Working effects: Items that have been provided to the employees to minimize contamination to product (e.g., aprons, booties, gloves, smocks etc.)

To Do List – Outstanding Items to Complete in Manual

Instructions: *When you are completing your CanadaGAP manual have this "To Do List" handy. If you need to make a change in your operation or are unable to check off a procedure immediately due to circumstances outside of your control (i.e., will complete the task at a later date), record the information in the appropriate section below. Once you have gone through the entire manual those areas requiring change/completion will be documented and this will save you from having to look for those items later. After you have completed the procedure, record the date, go back to the manual and check both the appropriate box there and the last column below.*

Section in Manual		Items Not Yet Complete	Item(s) Completed (✓) and Date	Item(s) Checked Off in Manual (✓)
Example:		**Portable toilets ordered – to be delivered April 12**	✓ **(April 15/13)**	✓
1. Commodity Starter Products N/A				
2. Premises				
2.1	Production Site Exterior and Surroundings Assessment, Cleaning, Maintenance, Repair and Inspection			
2.2	Production Site Interior Assessment, Cleaning, Maintenance, Repair and Inspection			
2.3	Building Exterior and Surroundings Assessment, Cleaning, Maintenance, Repair and Inspection			
2.4	Building Interior Assessment, Cleaning, Maintenance, Repair and Inspection			
3. Commercial Fertilizers and Soil Amendments				
3.1	Purchasing and Receiving			
3.2	Application			
3.3	Storage			
4. Manure, Compost/Compost Tea and Other By-Products				

Section in Manual		Items Not Yet Complete	Item(s) Completed (✓) and Date	Item(s) Checked Off in Manual (✓)
4.1	Purchasing and Receiving			
4.2	Application			
4.3	Storage			
5. Mulch and Row Cover Materials N/A				
6. Agricultural Chemicals				
6.1	Purchasing and Receiving			
6.2	Application			
6.3	Storage			
7. Agricultural Water				
7.1	Source Assessment			
7.2	Storage			
8. Equipment				
8.1	Purchasing, Receiving and Installation			
8.2	Use, Cleaning, Maintenance, Repair and Inspection			
8.3	Calibration			
8.4	Storage			
9. Cleaning and Maintenance Materials				
9.1	Purchasing and Receiving			
9.2	Use			

Section in Manual		Items Not Yet Complete	Item(s) Completed (✓) and Date	Item(s) Checked Off in Manual (✓)
9.3	Storage			
10. Waste Management				
10.1	Storage and Disposal of Garbage, Recyclables and Compostable Waste			
10.2	Storage and Disposal of Empty Agricultural Chemical Containers			
10.3	Disposal of Production Wastewater and Waste from Toilets and Hand Washing Facilities			
11. Personal Hygiene Facilities				
11.1	Facilities			
12. Employee Training				
12.1	Employee Training			
12.2	Employee Illness			
13. Visitor Policy				
13.1	Visitor Protocols			
14. Pest Program for Production Sites and Buildings				
14.1	Control and Monitoring			
14.2	Storage			
15. Water (for Fluming and Cleaning)				
15.1	Water Assessment			
15.2	Storage			

Section in Manual		Items Not Yet Complete	Item(s) Completed (✓) and Date	Item(s) Checked Off in Manual (✓)
15.3	Treatment			
16. Ice N/A				
17. Packaging Materials				
17.1	Purchasing and Receiving			
17.2	Use of Packaging Material			
17.3	Storage			
18. Growing and Harvesting				
18.1	Growing			
18.2	Harvesting			
19. Sorting, Grading, Packing and Storing				
19.1	Selecting/Purchasing and Receiving Harvested/Market Product			
19.2	Storage and Grading			
19.3	Packing			
20. Storage of Product				
20.1	Storage Conditions for Harvested Product			
20.2	Storage Conditions for Market Product			
21. Transportation				
21.1	Transportation of Product in Harvested Product Packaging Materials			

Section in Manual		Items Not Yet Complete	Item(s) Completed (✓) and Date	Item(s) Checked Off in Manual (✓)
21.2	Transportation of Product in Market Ready Packaging Materials			
22. Identification and Traceability				
22.1	Traceability System			
23. Deviations and Crisis Management				
23.1	Minor Deviations and Corrective Action			
23.2	Major Deviations and Corrective Action			
23.3	Crisis Management			
23.4	Complaint Handling			
23.5	Food Defense			
23.6	Allergens			
24. CanadaGAP Food Safety Manual Review				
24.1	Protocols			

Compendium of Food Safety Forms		Item(s) Not Yet Complete	Item(s) Completed (✓)	Item(s) Checked Off in Manual (✓)
ANNUAL FORMS				
A.	Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist			
B.	Storage Assessment			
C.	Employee Personal Hygiene and Food Handling Practices Policy - Production Site			
D.	Employee Personal Hygiene and Food Handling Practices Policy – Packinghouse/Product Storage			
E.	Pest Control for Production Sites Buildings			
F.	Water (for Fluming and Cleaning) Assessment			
S.	Allergen Information - Assessment			
T.	Food Defense			
ONGOING FORMS				
G.	Cleaning, Maintenance and Repair of Production Sites and Buildings			
H1.	Agronomic Inputs (Agricultural Chemicals)			
H2.	Agronomic Inputs (Other)			
I.	Equipment Cleaning, Maintenance and Calibration			
J.	Cleaning and Maintenance – Personal Hygiene Facilities			

Compendium of Food Safety Forms		Item(s) Not Yet Complete	Item(s) Completed (✓)	Item(s) Checked Off in Manual (✓)
K.	Training Session			
L.	Visitor Sign-In Log			
M.	Pest Monitoring for Production Sites and Buildings			
N1.	Water Treatment Control and Monitoring			
N2.	Water Temperature Control and Monitoring			
O.	Transporting Product			
P.	Harvesting and Storing Product			
Q.	Packing and Storing Market Product			
R.	Deviations and Corrective Actions			

Farm/Storage/Packinghouse Information

***Note**: The purpose of completing this section of the Manual is to provide reviewers (e.g., auditors) with a general overview of your operation.*

Legal Operating Name: _____

Name of Person(s)
Responsible for the Operation: _____
*(**Note**: This person(s) becomes the person(s) responsible referred to in this Manual.)*

Address: _____
(Physical address of office location)

_____

Telephone: (____) _____

Cell: (____) _____

Fax: (____) _____

Email Address: _____

Food Safety Program Contact(s) and Contact(s) Information (if different from above): _____
(Person(s) responsible for the Food Safety Program)

_____

Recall Coordinator(s) and Contact(s) Information (if different from above): _____

_____

Draw below the farm/storage/packinghouse's organizational structure (or attach the operations' organizational chart). Include name(s), job title(s), a brief description of job responsibilities and show the reporting relationship(s) (e.g., using arrows). Include only those people involved in activities relevant to food safety.

Brief Background

Amount of land in greenhouse production (owned and rented); length of growing/packing/storing season; who product is being packed/stored for:

_____

_____

_____

Farm/Storage/Packinghouse Description

Describe [e.g., number of locations (production sites, packinghouses, storages, etc.)] _____

_____

_____

_____

_____

_____

Please Check and List All Applicable Items Below:

Type of Greenhouse Production:	**Type of Greenhouse Operation:**
❒ Products for Fresh Consumption (*list):* _____ ❒ Products for Processing (*list):* _____ _____ _____ ❒ Other Uses *(describe):* _____ _____ _____	❒ Production ❒ Production Site Packing into Market Ready Packaging Materials ❒ Packinghouse with Washing Activities ❒ Packinghouse with No Washing ❒ Packing for Other Operations (i.e., co-packing) ❒ Storage ❒ On-Farm Processing *(list products):* _____ _____ _____ ❒ Other *(describe):* _____ _____ _____
❒ Producing Own Commodity Starter Products	
Other Crops Produced: ❒ _____ ❒ _____ ❒ _____	Other Farm Programs *(please indicate date of last review)*: ❒ Environmental Farm Plan _____ ❒ Other Food Safety Program(s)/Audit(s): _____ ❒ Other Certifications Achieved: _____ _____

❒ _____ ❒ _____ Livestock/Poultry Operations *(specify type):* ❒ _____ ❒ _____	❒ Nutrient Management Plan: _____ ❒ Reduced input (e.g., no spray, IPM): _____ ❒ Organic Production: _____ ❒ Other *(describe)*: _____ _____ _____

Annual Operation Start Date

Give the date of when your season begins. If you are operating year round then you must choose a start date.

_____

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1. Commodity Starter Products

Forms Required	N/A

No food safety hazards have been identified for commodity starter products (e.g., seeds and plants) used to grow these products.

2. Premises

Forms Required	A, B, G

RATIONALE:

Direct and indirect contamination of product can occur due to previous activities in a production site or activities on adjacent lands. Animals (both wild and domestic), insects and birds are potential sources of contamination to product because they may carry a variety of pathogens. Therefore, sites must be assessed before use to ensure all biological, chemical and physical hazards are minimized.

The design and construction of both the interior and exterior of buildings is important in preventing the contamination of product. For example, improper drainage results in standing water or wet areas around facilities that can create breeding grounds for insects and other pests. Long grass and bushes around the exterior walls of buildings may also harbour pests. Pests allowed to live and breed directly outside of buildings have a greater chance of entering the buildings and contaminating the product.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

2.1 Production Site Exterior and Surroundings Assessment, Cleaning, Maintenance, Repair and Inspection

REQUIREMENT	*The exterior of production sites must be assessed before use for biological, chemical and physical hazards due to previous use, and adjacent agricultural and non-agricultural activities and must be cleaned, maintained, repaired and inspected to minimize sources of contamination.*

PROCEDURES:

- If product is grown directly in the soil, the person responsible considers activities for the past five years of any production site operating for the first time and assesses potential hazards. Each new site is assessed for historical use of:
  - ❒ Persistent heavy metals such as mercury, lead, etc. remaining from previous applications of fertilizers, agricultural chemicals, sewage sludge or liming materials
  - ❒ Contaminants remaining from previous non-agricultural uses (e.g., landfills, refineries, buildings)

- Annually – The person responsible assesses potential hazards for ALL production sites. The person responsible checks that EACH site has NO:
  - ❒ Adjacent areas where livestock excrement dust, aerosols or feathers may drift or leach
  - ❒ Adjacent areas where crop production inputs may drift or leach (e.g., agricultural chemicals, soil amendments, fertilizers, pulp sludge)
  - ❒ Adjacent areas where non-agricultural activities contribute to air, water or soil pollution [i.e., industrial activities, roadside debris, foreign objects (e.g., glass bottles, etc.)]
  - ❒ The area is not prone to flooding; there is proper drainage around the production site
  - ❒ Unusually high levels of animal and bird activity (e.g., migratory paths, nesting or feeding areas)
  - ❒ Any other air, soil or water pollutants are not a source of contamination

Note: *If any of the above-noted hazards was identified, the following corrective actions are suggested as options:*

- Seeking and following expert advice
- Testing soil using an accredited lab where analyses are performed to standards equivalent to ISO 17025 (File under Tab: Test Results)
- Constructing and maintaining barriers or production site perimeters (e.g., fences, ditches, storage pits, buffer zones)
- Using bird deterrents, scarers and barriers (e.g., netting)
- Other *(describe)*: _____

_____

- Annually – The person responsible, for EACH production site, assesses all of the following potential exterior hazards:
  - Each production site is designed or constructed where there is or are:
    - ❒ no areas where pests (e.g., insects, mice, birds, rats) can hide/live/feed (e.g., junk piles, long grass, bushes, garbage, unused machinery)
    - ❒ no holes/leaks/broken items (e.g., plastic, windows, glass panes, screens)
    - ❒ doors that fit properly
    - ❒ doors with locks
    - ❒ windows and side vents that can be sealed or have close-fitting screens

! ❒ Monthly (when in use) – The person responsible conducts an inspection of the exterior of the production site and completes Form (G) Cleaning, Maintenance and Repair of Production Sites and Buildings OR _____

Note: *You may refer to the chart provided in Appendix K -- Production Site and Agricultural Water Source Assessment to help with your assessment.*

2.2 Production Site Interior Assessment, Cleaning, Maintenance, Repair and Inspection

REQUIREMENT	*The interior of production sites must be assessed for biological, chemical and physical hazards and must be cleaned, maintained, repaired and inspected to minimize sources of contamination.*

PROCEDURES:

! ❒ Annually – The person responsible completes or updates Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist) OR _____

- Annually – The person responsible, for EACH production site, assesses all of the following potential interior hazards. Each production site IS or HAS:
  - ❒ No animals, either wild or domestic (including pets), pests (e.g., birds, rodents) or bird nests
  - ❒ Adequate drainage (i.e., floor sloped, sump pump for backup, drain covers)
  - ❒ Pipes or condensation that does not leak onto product
  - ❒ Fans are dust-free and clean
  - ❒ Clean areas (e.g., free from garbage, spills)
  - ❒ Others

! ❒ Monthly (when in use) – The person responsible conducts a monthly inspection of the production site interior, and completes Form (G) Cleaning, Maintenance and Repair of Production Sites and Buildings OR _____

2.3 Building Exterior and Surroundings Assessment, Cleaning, Maintenance, Repair and Inspection

REQUIREMENT	*The exterior of buildings and their surroundings must be assessed for the risk of biological, chemical and physical hazards and must be cleaned, maintained, repaired and inspected to minimize sources of contamination.*

Note: *Agricultural chemical storage buildings are not included in this section. See Section 6.3: Storage, for requirements on storage conditions for agricultural chemicals.*

PROCEDURES:

- Annually – The person responsible, for EACH building, assesses all of the following potential exterior hazards:
  - Each building (when in use) is located where:
    - ❒ crop production inputs will not drift or leach (i.e., agricultural chemicals, soil amendments, fertilizers or manure)
    - ❒ non-agricultural uses are not a source of air, water or soil pollution (e.g., landfills, refineries, water treatment plant, chemical processing plant, etc.)
    - ❒ livestock production is not a source of contamination
    - ❒ the area is not prone to flooding; there is proper drainage around the building (i.e., no standing water or wet areas)
    - ❒ any other air, soil or water pollutants are not a source of contamination
  - Each building is designed or constructed where there is or are:
    - ❒ no areas where pests (e.g., insects, mice, birds, rats) can hide/live/feed (e.g., junk piles, long grass, bushes, garbage, unused machinery)
    - ❒ no holes/crevices/leaks (e.g., walls, windows, screens)
    - ❒ doors that fit properly
    - ❒ doors that can be secured (i.e., to lock storages when unsupervised)
    - ❒ windows that can be closed OR have close-fitting screens (i.e., no gaps)

! ❒ Monthly (when in use) – The person responsible conducts an inspection of the exterior of buildings and completes Form (G) Cleaning, Maintenance and Repair of Production Sites and Buildings OR

2.4 Building Interior Assessment, Cleaning, Maintenance, Repair and Inspection

REQUIREMENT	*The interior of buildings must be assessed for biological, chemical and physical hazards and must be cleaned, maintained, repaired and inspected to minimize sources of contamination.*

Note: *Agricultural chemical storage buildings are not included in this section. See Section 6.3: Storage, for requirements on storage conditions for agricultural chemicals.*

PROCEDURES:

! ❒ Annually – The person responsible completes or updates Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR

- Annually – The person responsible, for EACH building, assesses all of the following potential interior hazards. Each building IS or HAS:
  - ❒ No animals, either wild or domestic (including pets), pests (e.g., birds, rodents) or bird nests
  - ❒ NOT used for livestock/poultry slaughter or meat processing activities

- ❒ No sources of cross-contamination that may be carried by air, foot, hands, equipment, etc. (e.g., livestock, poultry, fish, etc.)
- ❒ Lighting that is adequate (e.g., easy to see in corners, suitable for grading) *Refer to Appendix F -- General Guidelines for Adequate Lighting*
- ❒ Lighting that is shatterproof or covered where product and market ready packaging materials are handled or stored
- ❒ Adequate drainage (i.e., floor sloped, sump pump for back up, drain covers)
- ❒ Pipes or condensation that do not leak onto product or packaging materials
- ❒ Clean areas where product and packaging materials are handled and stored (e.g., free from garbage, spills, pests and pest droppings)
- ❒ Walls, floors and ceilings without crevices

! ❒ Monthly (when in use) – The person responsible conducts a monthly inspection of the interior of buildings, and completes Form (G) Cleaning, Maintenance and Repair of Production Sites and Buildings OR _____

For Harvested and Market Product Storages

! ❒ Annually [prior to first time (in a season) use] – The person responsible inspects the product storage(s) and completes Form (B) Storage Assessment OR _____

_____

Confirmation/Update Log:

Date						
Initials						

Forms Required	N/A

3. Commercial Fertilizers and Soil Amendments

RATIONALE:

Commercial fertilizers and soil amendments can potentially contaminate product with toxic matter if the incorrect types are spread (e.g., materials containing mercury, arsenic, lead, etc.).

- ❍ Commercial fertilizers are used on the premises
- ❍ Soil amendments are used on the premises

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 4: Manure, Compost/Compost Tea and Other By-Products.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

3.1 Purchasing and Receiving

REQUIREMENT	*Commercial fertilizers and soil amendments must be purchased/selected and received properly to minimize chemical contamination.*

PROCEDURES:

- The person responsible purchases or selects:
  - ❒ Commercial fertilizers that meet applicable regulations
  - ❒ Soil amendments that meet provincial regulations

❒ The person responsible receives only the commercial fertilizers and soil amendments that were purchased or selected

3.2 Application

REQUIREMENT	*Commercial fertilizers and soil amendments must be applied properly to minimize contamination.*

PROCEDURES:

❒ The person responsible ensures that commercial fertilizers and soil amendments are applied according to expert recommendations

3.3 Storage

- ❍ Commercial fertilizers are stored on the premises
- ❍ Soil amendments are stored on the premises

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 4: Manure, Compost/Compost Tea and Other By-Products.

REQUIREMENT	*Commercial fertilizers and soil amendments must be stored in designated areas and under the proper conditions.*

PROCEDURES:

- The person responsible stores commercial fertilizers and soil amendments:
  - ❒ Separate from product and packaging materials
  - ❒ Only in product storage(s) when the storage(s) are not in use
  - ❒ In a covered, clean and dry location if necessary
  - ❒ With labels intact and legible if applicable
  - ❒ In a manner that maintains the integrity of the containers and its contents
  - ❒ Other *(describe)*: _____

Confirmation/Update Log:

Date						
Initials						

Forms Required	H2

4. Manure, Compost/Compost Tea and Other By-Products

RATIONALE:

Product may become contaminated with biological, chemical or physical contaminants if manure, compost and compost teas are not properly handled, applied or stored. It is important when purchasing manure to know the type (e.g., cow, sheep, chicken, etc.). Manure is known to carry pathogenic bacteria (e.g., *E. coli* O157:H7, Salmonella). These organisms can be eliminated through proper composting of manure (e.g., time, temperature) so that it is not a source of contamination to product. Presently there is little scientific information on pathogen survival when other by-products are applied in the production site (e.g., seafood waste, vegetable culls, compost tea). *Refer to Section 23: Deviations and Crisis Management 23.2 Major Deviations and Corrective Action – Chart Section 4: Manure, Compost/Compost Tea and Other By-Products for action to take if deviations occur when purchasing/selecting/receiving compost and compost tea.*

- ❍ Manure is used on the premises
- ❍ Compost/compost tea is used on the premises
- ❍ Other by-products are used on the premises

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 5: Mulch and Row Cover Materials.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

4.1 Purchasing and Receiving

REQUIREMENT	*Manure, compost/compost tea and other by-products must be purchased or selected and received with knowledge of origin and handling.*

PROCEDURES:

❒ The person responsible does NOT purchase or use sewage sludge on any production site intended for product production even in rotational years

❒ When purchasing or selecting manure or other by-products from a supplier (e.g., company, neighbour, self), the person responsible is aware of the type (e.g., cattle, horse or hog manure; vegetable culls; seafood waste) and its origin [i.e., produced under conditions that are not a source of chemical (e.g., heavy metals) or physical (e.g., glass) contamination]

- The person responsible receives only:
  - ❒ Manure and other by-products that were purchased or selected

Purchased Compost/Compost Tea *(If not applicable, proceed to the next sub-section: Compost/Compost Tea Produced On-Site)*

❒ The person responsible purchases compost/compost tea from a supplier and is aware of origin [i.e., produced under conditions that are not a source of biological (e.g., pathogens), chemical (e.g., heavy metals) or physical (e.g., glass) contamination] and requests a letter of assurance

! ❒ The person responsible receives only compost/compost tea that was purchased along with the letter of assurance (one letter per supplier per season) (File under Tab: Letters of Assurance/Certificates)

Compost/Compost Tea Produced On-Site *(If not applicable, proceed to Section 4.2: Application)*

❒ The person responsible produces compost/compost tea under conditions that are not a source of biological (e.g., pathogens), chemical (e.g., heavy metals) or physical (glass) contamination, and records the composting procedure (See *Appendix C -- Composting Livestock Manure – An Example and Compost Tea Information*)

! ❒ The person responsible receives only the compost/compost tea that was produced following a completed composting procedure. (File procedures/records under Tab: Letters of Assurance/Certificates)

4.2 Application

REQUIREMENT	*Manure and compost/compost tea must be spread at the appropriate time to minimize contamination of product.*

PROCEDURES:

- The person responsible spreads:
  - ! ❒ Manure only when the interval between application and harvest is greater than 120 days
  - ❒ Compost/compost tea (at any time)

! ❒ The person responsible records manure, compost/compost tea and other by-products (except cover crops/green manure) application details on Form (H2) Agronomic Inputs (Other) OR _____

4.3 Storage

❍ Manure is stored on the premises
❍ Compost/compost tea is stored on the premises
❍ Other by-products are stored on the premises

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 5: Mulch and Row Cover Materials.

REQUIREMENT	*Manure, compost/compost tea and other by-products must be stored in designated areas.*

PROCEDURES:

❒ The person responsible stores manure, compost/compost tea and other by-products separate from each other, product, packaging materials, fuels, oils, chemicals and cleaning agents

❒ The person responsible stores manure and other by-products away from water sources

❒ The person responsible stores manure and compost/compost tea in a location where drifting or leaching will not be a source of contamination to product, OR in a way that protects from leaching or drifting (e.g., tarped, lagoon, barrier, etc.)

Confirmation/Update Log:

Date						
Initials						

5. Mulch and Row Cover Materials

Forms Required	N/A

This Section is not applicable to Greenhouse Production.

6. Agricultural Chemicals

Forms Required	A, H1

RATIONALE:

Production of safe products requires a non-contaminated environment. The inappropriate use, handling and storage of agricultural chemicals may result in a chemical hazard. All federal and provincial regulations must be adhered to.

- ❍ Agricultural chemicals are used on the premises
- ❍ Product is destined for export markets

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 7: Agricultural Water.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

6.1 Purchasing and Receiving

REQUIREMENT	*Agricultural chemicals of the appropriate type must be purchased and received to minimize chemical contamination of product.*

PROCEDURES:

❒ The person responsible purchases agricultural chemicals registered for use on the applicable product in Canada or permitted under the Own Use Import Program or the Grower Requested Own Use (GROU) Program

❒ The person responsible purchases agricultural chemicals from licensed dealers

! ● The person responsible receives:
- ! ❒ Only the agricultural chemicals that were purchased
- ! ❒ Containers that are not damaged
- ! ❒ Containers that are clearly and properly labelled and legible (name of product, active ingredient(s), concentration, PCP#, manufacturer's name, address and contact information and the instructions for use are on the label)
- ! ❒ A receipt and signs the receipt (File under tab: Letters of Assurance/Certificates) OR

6.2 Application

REQUIREMENT	*Agricultural chemicals must be applied by the appropriate person, following label instructions.*

PROCEDURES:

! ❒ Applicator has an applicator's license or is certified, OR is formally trained (e.g., online course) OR supervised by a formally trained/licensed/certified person (File under Tab: Letters of Assurance/Certificates)

! ❒ The person responsible applies agricultural chemicals that are registered for use on applicable product in Canada and not in excess of label recommendations and directions

! ❒ When agricultural chemicals are applied to the production site, the person responsible completes Form (H1) Agronomic Inputs (Agricultural Chemicals) OR _____

FOR PRODUCT DESTINED FOR EXPORT MARKETS: *(Note: the both the applicator of the agricultural chemicals and/or the exporter of the product would be the person responsible below)*

- The person responsible ensures that agricultural chemical residues on product do not exceed the published Maximum Residue Limits (MRL) in the destination market. Person responsible:
  - ❒ Has information (e.g., registration for the specific crop, product labels, Maximum Residue Limits, banned lists, etc.) for agricultural chemicals in destination market(s)
  - ❒ Uses only chemicals approved for use in the destination market(s)
  - ❒ Ensures chemical applications and application rates for target pests and diseases comply with label recommendations applicable to the destination market(s)
  - ❒ Demonstrates the timing between chemical application and harvest complies with the approved harvest interval in the destination market(s)
  - ❒ For those whose customers require agricultural chemical residue testing: Annually - Conducts agricultural chemical residue testing of market product using an accredited lab where analyses are performed to standards equivalent to ISO 17025, or participates in a third party agricultural chemical residue monitoring system which is traceable to the farm

    Refer to Appendix Q: Documentation Requirements on Agricultural Chemicals for Exported Product.

Note: *Refer to Section 8.2: Use, Cleaning, Maintenance, Repair and Inspection for rinsing and flushing application equipment. Further pest control product information is available on the Pest Management and Regulatory Agency (PMRA) web site* (http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/pmra-arla/index-eng.php) *and the Crop Life Canada (*www.cropro.org*/) MRL database*.

6.3 Storage

❍ Agricultural chemicals are stored, *proceed below.*
If not, proceed to Section 7: Agricultural Water.

REQUIREMENT	*Agricultural chemicals must be stored in designated areas and under the proper conditions.*

PROCEDURES:

! ❒ Annually – The person responsible records where agricultural chemicals are stored on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

! ● Agricultural chemicals are stored:
  - ! ❒ In an area dedicated only to agricultural chemicals and commercial fertilizers. Contained fertilizers (e.g., bag, jug, tote) may be stored in the chemical storage except where prohibited by applicable regulations. Fertilizers must be stored in a designated area separate from agricultural chemicals
  - ! ❒ In a clearly identified location (i.e., sign on door)
  - ! ❒ In a locked location

! ❒ In a covered, clean and dry location that is temperature appropriate (e.g., to prevent chemicals from freezing)
❒ With labels/identification intact and legible [name of product, active ingredient(s), concentration, PCP#, manufacturer's name and address are on the label; the manufacturer's contact information and the instructions for use do not need to be on the label but are readily available]
❒ In a manner that maintains the integrity of the container and prevents leakage (e.g., closed bag, in a container, with a lid)

***Note**: Refer to Section 10.2: Storage and Disposal of Empty Agricultural Chemical Containers.*

Confirmation/Update Log:

Date						
Initials						

7. Agricultural Water

Forms Required	A

RATIONALE:

Agricultural water is an essential element used for multiple purposes in the production of horticultural products. However, water may also be a source of biological or chemical contamination. The risk of contamination is dependent on the quality of the agricultural water source and the way in which it is stored and used to irrigate crops (e.g., drip, overhead, sprinkler, trickle).

- ❍ Agricultural water is used on the premises, *proceed below*.
  If not, proceed to Section 8: Equipment.
- ❍ All sources of agricultural water are municipal (and these are NOT re-circulated/recycled/stored).
  If so, proceed to Section 8: Equipment.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

7.1 Source Assessment

REQUIREMENT	*Each agricultural water source must be identified, potential hazards must be assessed and preventative measures and/or corrective actions must be taken (when necessary).*

***Note**: EACH water source used for irrigation, agricultural chemical or commercial fertilizer applications (e.g., overhead, spray, drip, trickle, furrow) and for growing floating/living lettuce/herbs must be assessed (e.g., ponds, streams, lakes, rivers, canals, creeks, springs, cisterns, reservoirs, ground water).*

PROCEDURES:

❒ The person responsible does NOT use untreated sewage

❒ If an abnormal event occurs to cause contamination of the water source (e.g., publicly announced breach of sewage system, chemical leakage), the person responsible does not spray, irrigate, chemigate or fertigate from that source

- Annually – The person responsible assesses all of the following potential hazards for each agricultural water source:
  - ❒ Unusually high levels of wild animal and bird activity (e.g., migratory paths, nesting or watering areas)
  - ❒ Upstream contamination sources
  - ❒ Access by livestock, domestic animals and birds
  - ❒ Runoff or spills from agricultural chemicals, oil, fuel, manure, etc.
  - ❒ Contamination in pipes
  - ❒ Recreational use (e.g., swimming area)
  - ❒ Working condition of the well (e.g., seals and well casings fit tightly, pump functioning)
  - ❒ Leaching of sunken wells by overland flooding
  - ❒ Storage of irrigation pipes where they could become contaminated by manure, pests or agricultural chemicals

Refer to the following to help with the assessment:

- *There is a high risk of contamination associated with using poor quality agricultural water on product.*
- Drip or trickle irrigation methods **may** reduce the risk of contamination because the water is less likely to come into direct contact with the edible portion of the product.
- If the agricultural water is potable then there may be no risk from the source itself.
- *Water quality varies depending on the water source. The chart below is provided to help in the assessment of risk associated with their different water sources*

Water Source	Level of Risk
Municipal Water	Lowest
Well Water and Tertiary Water	Low
Pond/Reservoir/Dugout Fed by Groundwater (springs/wells) or Rainwater	Moderate
Lake	Medium
Pond/Dugout Fed by Stream, Ditch or Run-Off	High
River, Stream, Creek, Canal, Flooding	Highest

- *Water testing conducted early in the irrigation season may be used as an indicator of the risk associated with different water sources*
- *Water testing may provide evidence of (or increase) due diligence*
- *It is strongly recommended that agricultural water sources are tested. The test will provide a general idea of the quality of the water and help to determine if possible contamination is present. Water would be tested for Total Coliforms and E. coli using an accredited lab where analyses are performed to standards equivalent to ISO 17025. See Appendix G -- Water Testing for examples of how to take a sample, where to take it and how to interpret the results.*

Note: *You may refer to the chart provided in Appendix K -- Production Site and Agricultural Water Source Assessment to help with your assessment (and for preventative measures/corrective actions).*

❒ After assessing the source, if the person responsible determines that it may be contaminated an alternate source is used (if available)

- If no alternate source is available, **corrective actions are required.** The following are some options *(check those that apply)*:
  - ❒ Construct barriers (e.g., fences, ditches, storage pits)
  - ❒ Control runoff with sod strips, grass waterways, vegetative buffers, etc.
  - ❒ Spread manure during dry weather or incorporate manure within 24 hours of spreading
  - ❒ Leave a manure-free protective strip at least 10 m wide around surface water sources
  - ❒ Ensure all equipment is well-maintained
  - ❒ Ensure equipment is not cleaned, maintained or drained where the water source may become contaminated
  - ❒ Install aeration or filtration systems
  - ❒ Follow expert advice
  - ❒ Level ground to prevent runoff
  - ❒ Allow as long a period as possible between irrigating and harvest
  - ❒ Ensure proper operation of sewer/septic system
  - ❒ Retest water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025. See *Appendix G -- Water Testing*
  - ❒ Does not irrigate

- **Preventative measures are also required to reduce the risk of contamination in the water source.** The following are some options *(check those that apply)*:
  - ❒ Construct barriers (e.g., fences, ditches, storage pits)
  - ❒ Control runoff with sod strips, grass waterways, vegetative buffers, etc.
  - ❒ Level ground to prevent runoff
  - ❒ Spread manure during dry weather or incorporate manure within 24 hours of spreading
  - ❒ Leave a manure-free protective strip at least 10 m wide around surface water sources
  - ❒ Ensure all equipment is well-maintained
  - ❒ Ensure equipment is not cleaned, maintained or drained where the water source may become contaminated
  - ❒ Ensure proper operation of sewer/septic system
  - ❒ Install aeration or filtration systems
  - ❒ Follow expert advice
  - ❒ Allow as long a period as possible between irrigating and harvest
  - ❒ Test water for chemicals if you know of a particular problem (e.g., agricultural chemical spill where you know what chemical was spilled) and if the test is available
  - ❒ Test water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025. See Appendix G -- Water Testing
  - ❒ Does not irrigate

❒ The person responsible uses only water from a **potable** source to make agricultural chemical solutions for **overhead** spray application AND for misting (overhead/surface application of water)

! - At least twice annually– the person responsible tests the water used for overhead spray of agricultural chemicals and for misting for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025 to ensure that the water is potable (File under Tab: Test Results) *Refer to Appendix G -- Water Testing*
  - ! ❒ Once prior to use
  - ! ❒ At least once more during the season to ensure water potability is being maintained

NOTE: *if the water is from a municipal source it does NOT need to be tested unless it is re-circulated/recycled/stored*

For leafy greens and fresh herbs ONLY:

❒ The person responsible uses only water from a **potable** source to fill or replenish ponds for growing floating/living lettuce/herbs

❒ The person responsible uses only water from a **potable** source for irrigation, fertigation and chemigation

! - At least twice annually– the person responsible tests the water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025 to ensure that the water is potable (File under Tab: Test Results). *For further guidance, refer to Appendix G -- Water Testing*
  - ! ❒ Once prior to use
  - ! ❒ At least once more during the season to ensure water potability is being maintained

NOTE: *if the water is from a municipal source it does NOT need to be tested unless it is re-circulated/recycled/stored.*

7.2 Storage

❍ Agricultural water is stored, *proceed below.*
If not, proceed to Section 8: Equipment.

REQUIREMENT	*Tanks, containers or cisterns used to store agricultural water must not be a source of contamination to water or product.*

PROCEDURES:

❒ Annually - The person responsible records location of water storage tank/container/cistern on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist) OR _____

- Prior to first use (in a season) – The person responsible:
  - ❒ Cleans the cistern, tank or container or used to store water (e.g., power washes, sanitizer)
  - ❒ Follows instructions in *Appendix H -- Cleaning and Treating Cisterns – An Example* OR ____

OR

❒ Tests water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025 (File under Tab: Test Results) See *Appendix G -- Water Testing*

❒ The person responsible ensures the tank, container or cistern has a lid, is free from rust and is closed when not in use

Confirmation/Update Log:

Date						
Initials						

8. Equipment

Forms Required	A, I

RATIONALE:

A good agricultural practice is to clean and maintain production site, packinghouse and storage equipment to reduce the potential for biological, chemical (residues) and physical (e.g., metal, glass, plastic, wood) contamination. The appropriate cleaning methods and materials will depend on the type of equipment and the nature of the product. Procedures may include the removal of debris from equipment surfaces, application of soaps/detergents, scrubbing/friction, rinsing with water, and where, appropriate, disinfection/sanitization. When required, equipment must be calibrated to ensure accurate application and delivery. Included in this section is irrigation equipment, slabs/bags (growing media), wires, clips, ladders, bamboo stakes, elastic bands, plastic/metal/wood gutters (trough systems), string and scissor carts (for pruning and harvesting, etc.).

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

8.1 Purchasing, Receiving and Installation

Note: *This section includes both new and current equipment.*

REQUIREMENT	*Equipment must be purchased or built so that its design, construction and installation are not a source of contamination to product.*

PROCEDURES:

Production Site Equipment

❒ The person responsible ensures that calibration instructions are received with equipment or are written and made available (File under Tab: Calibration Instructions OR _____). If manufacturer's instructions are not available, refer to *Appendix E -- Agricultural Chemical Application Equipment Calibration - An Example*

- The person responsible ensures that design and construction of production site equipment (e.g., carts, knives, sprayer panels that touch product), will not be a source of contamination to product, and:
  - ❒ Have food contact surfaces that are easy to clean
  - ❒ Are easily accessible for cleaning and maintenance

❒ The person responsible receives only the equipment that was purchased or selected

Building Equipment

❒ Annually – The person responsible records where equipment is located/installed on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

- The person responsible ensures that design and construction of building equipment (e.g., packing and cutting surfaces, knives), will not be a source of contamination to product, and:
  - ❒ Have food contact surfaces that are easy to clean
  - ❒ Are easily accessible for cleaning and maintenance
  - ❒ Are made of non-porous surfaces (e.g., metal, stainless steel, puckboard, rubber)
  - ❒ Are equipped with shatterproof lights (if applicable), or are covered (e.g., prevent glass from falling into product or packaging material) (e.g., packing line, forklift, bin pilers)

❒ The person responsible receives only the equipment that was purchased or selected

❒ The person responsible ensures that calibration instructions are received with equipment or are written and made available (File under Tab: Calibration Instructions OR _____) (e.g., for scales to weigh agricultural chemicals, water treatment equipment)

❒ When installing equipment (e.g., the packing line), the person responsible ensures that the equipment is installed with sufficient space between walls, floors and other equipment to allow easy access for cleaning and maintenance

- The person responsible ensures that:
  - ❒ If catwalks are located above packing lines or areas where market product is handled or stored, or where market ready packaging materials are stored, they are protected and have kick plates and solid floors (e.g., rubber mats) to prevent contamination of product
  - ❒ Barriers are in place to eliminate unauthorized access to equipment (e.g., walls, doors, ropes, signs). *Refer to Section 13.1: Visitor Protocols*

8.2 Use, Cleaning, Maintenance, Repair and Inspection

REQUIREMENT	*Equipment use must not contribute to the contamination of product. Equipment must be properly cleaned, maintained, repaired and inspected.*

PROCEDURES:

Production Site Equipment

❒ Equipment is not used (whether in use or not) for livestock/poultry slaughter or meat processing activities

❒ Before each use of production site equipment, the person responsible conducts a general inspection and ensures the equipment does not contribute to the contamination of product (e.g., checks for leaks, broken, corroded or damaged parts, cleanliness)

❒ Weekly (at a minimum when in use) – The person responsible records the results of the inspection on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

_____

! ● Weekly (at a minimum when in use) – The person responsible ensures that production site equipment (i.e., picking cart, step stools) is clean by:

Cleaning Procedure *(choose at least one of the following options)*

❒ Washing with *(choose at least one of the following options)*:
  - ❒ Water and friction (e.g. pressure wash, wiping, scrubbing)
  - ❒ Water and a sanitizer (e.g., chlorine, quaternary ammonium)
  - ❒ Water and soap

AND/OR

❒ Dry cleaning (e.g., broom, brushes, air)

❒ Describe your step-by-step cleaning instructions [include any soaps or sanitizers, concentrations and equipment used (*refer to Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment - An Example, for examples of chlorine solutions for equipment cleaning and Appendix N -- Sanitation Standard Operating Procedures (SSOP) – An Example*)]:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

[Filling in the above description completes your Sanitation Standard Operating Procedure (SSOP) for equipment cleaning.]

! ❒ Weekly - The person responsible records cleaning of equipment on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

_____

- Hand-held cutting and trimming tools that come into direct contact with product (e.g., clippers, pruners, knives) are:
  - ❒ Inspected daily when in use for damaged or broken tips
  - ❒ Knives are not retractable (e.g., boxboard cutters, retractable utility knives) **OR**
    If retractable knives are used, the following procedures are followed to control the risk (e.g., not used for harvesting, inspecting all knives to ensure blade is intact) (*describe your procedure):* _____

    _____

    _____

    _____

    _____

! - Hand-held cutting and trimming tools that come into direct contact with product (e.g., clippers, pruners, knives) are cleaned:
  - ! ❒ Daily before use
  - ! ❒ Using water with friction; water and soap, or water and a sanitary dip that is changed before use [e.g., quaternary ammonium, chlorine (*refer to Appendix B -- Chlorination of*

Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example, for examples of chlorine concentrations for sanitary dips)] OR (*describe cleaning procedure*)*:*

_____

_____

_____

_____

! ❒ Daily – The person responsible records cleaning of hand-held cutting and trimming tools in direct contact with product on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

_____

- Cloths used for wiping product are:
  - ❒ laundered daily
  - ❒ used for only one commodity at a time
  - ❒ dedicated only for wiping product (e.g., not for other cleaning purposes, drying hands, etc.)

❒ Scales are cleaned between uses if the same scale is used to weigh product and agricultural chemicals

❒ Agricultural chemical application equipment is rinsed or flushed according to label instructions when applying agricultural chemical(s) (e.g., on a crop for which the previous chemical used is not registered)

❒ Agricultural chemical application equipment is NOT cleaned, used for mixing, maintained, rinsed or flushed where water source(s) or the production site may become contaminated

❒ Backflow prevention devices or other devices are used when filling agricultural chemical application equipment to prevent backflow of agricultural chemicals into water sources or production site *(refer to Appendix O -- Examples of Backflow Prevention During Mixing of Agricultural Chemicals)*

Building Equipment

❒ Equipment is not used (whether in use or not) for livestock/poultry slaughter or meat processing activities

❒ Before initial use of building equipment, the person responsible conducts a general inspection and ensures the equipment does not contribute to the contamination of product (e.g., checks for chipping paint, rust, rotting wood, leaks; broken, loose, corroded or damaged parts, cleanliness)

! ❒ Weekly (at a minimum when in use) – The person responsible inspects equipment (e.g., grading table, packing line, baggers) for proper functioning (e.g., checks for faulty or loose parts). The person responsible records the inspection on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

! - Weekly (at a minimum when in use) – The person responsible ensures that building equipment is clean by:

  Cleaning Procedure *(choose at least one of the following options)*
  - ❒ Washing with (choose at least one of the following options):
    - ❒ Water and friction (e.g. pressure wash, wiping, scrubbing)

- ❒ Water and a sanitizer (e.g., chlorine, quaternary ammonium)
- ❒ Water and soap

AND/OR

- ❒ Dry cleaning (e.g., broom, brushes, air)

❒ Describe your step-by-step cleaning instructions [include any soaps or sanitizers, concentrations and equipment used (*refer to Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment - An Example, for examples of chlorine solutions for equipment cleaning and Appendix N -- Sanitation Standard Operating Procedures (SSOP) – An Example*)]:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

[Filling in the above description completes your Sanitation Standard Operating Procedure (SSOP) for equipment cleaning.]

! ❒ Weekly - The person responsible records cleaning of equipment on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

_____

❒ Scales are cleaned between uses if the same scale is used to weigh product and agricultural chemicals

- Hand-held cutting and trimming tools that come into direct contact with product (e.g., knives, pruners) are:
  - ❒ Inspected daily when in use for damaged or broken tips
  - ❒ Knives are not retractable (e.g., boxboard cutters, retractable utility knives) **OR**

    If retractable knives are used, the following procedures are followed to control the risk (e.g., not used for packing, inspecting all knives to ensure blade is intact) (*describe your procedure):* _____

    _____

    _____

    _____

    _____

! ● Hand-held cutting and trimming tools that come into direct contact with product (e.g., knives, pruners) are cleaned:
  ! ❒ Daily before use
  ! ❒ Using water and soap, or water and a sanitary dip that is changed before use [e.g., quaternary ammonium, chlorine (refer to Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example, for examples of chlorine concentrations for sanitary dips)] OR (describe cleaning procedure):

_____

_____

_____

_____

! ❒ Daily - The person responsible records cleaning of hand-held cutting and trimming tools in direct contact with product on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

_____

8.3 Calibration

REQUIREMENT	*An effective calibration program must be followed for all equipment requiring calibration.*

PROCEDURES:

Production Site Equipment

! ❒ At the start of the season, when inspection results indicate a need, when key components are replaced (e.g., sprayer nozzles, belts or sprockets are changed), the person responsible calibrates production site equipment as per manufacturer's recommended calibration procedures. If manufacturer's procedures are not available refer to *Appendix E -- Agricultural Chemical Application Equipment Calibration - An Example*

● The person responsible calibrates the following production site equipment *(check all that apply; if not applicable, proceed to the next sub-section: Building Equipment)*:
  ! ❒ Agricultural chemical applicator (e.g., sprayer nozzles, hopper for granular application)
  ❒ Scales (if used to weigh agricultural chemicals)

! ❒ The person responsible records the calibration activity on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

Building Equipment

! ❒ At the start of the season, or when inspection results indicate a need, or when key components are replaced, the person responsible calibrates the equipment as per manufacturer's recommended calibration procedures

! ● The person responsible calibrates the following building equipment *(check all that apply; if not applicable, proceed to Section 8.4: Storage)*:
  ! ❒ Chlorinator
  ! ❒ pH meter (if used to verify water treatment, i.e., chlorination)
  ! ❒ ORP meter (if used to verify water treatment)
  ! ❒ Scales (if used to weigh agricultural chemicals)
  ! ❒ Thermometers (if used to monitor product and water temperature)
  ❒ Other *(specify)*: _____

! ❒ The person responsible records the calibration activity on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

8.4 Storage

REQUIREMENT	*Equipment must be stored in designated area(s) so that it will not contribute to the contamination of product.*

PROCEDURES:

❒ The person responsible stores production site equipment (when not in use) separate from product, water sources, market ready packaging materials and other sources of potential contamination

❒ The person responsible stores building equipment (when not in use) in a manner that prevents leakage of fuel, oil, gases, etc. from equipment coming into contact with product, water sources and market ready packaging materials

Confirmation/Update Log:

Date						
Initials						

9. Cleaning and Maintenance Materials

Forms Required	N/A

RATIONALE:

Cleaning and maintenance materials can be a source of chemical and physical contamination if the proper materials and procedures are not used.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

9.1 Purchasing and Receiving

REQUIREMENT	*Cleaning and maintenance materials must be properly purchased and received to ensure the appropriate type for use.*

PROCEDURES:

❒ When purchasing or selecting cleaning and maintenance materials that (including materials used on food contact surfaces), the person responsible purchases or selects materials that were manufactured with ingredients that are appropriate for their intended use

❒ The person responsible receives only the cleaning and maintenance materials that were purchased or selected and verifies that the label contains the name of product, active ingredient(s), concentration and the manufacturer's name and address; the manufacturer's contact information and the instructions for use do not need to be on the label but are readily available

Note*: For materials, refer to Appendix D -- Reference Lists: Packaging Materials, Inks, Lubricants, Maintenance Materials, Sanitizers, Water Treatment Aids, and Food and Incidental Additives.*

9.2 Use

REQUIREMENT	*Cleaning and maintenance materials must be used so as not to be a source of contamination to product.*

- When using cleaning and maintenance materials, the person responsible:
  - ❒ Mixes materials by following the instructions for use and the concentration guidelines
  - ❒ Uses the appropriate material for its intended use
  - ❒ Follows the instructions for use during the application process

Note: *Refer to Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment - An Example, for examples and information on using chlorine to sanitize equipment.*

9.3 Storage

REQUIREMENT	*Cleaning and maintenance materials must be stored in designated areas and under proper conditions.*

- The person responsible stores cleaning and maintenance materials:
  - ❒ Separate from product, equipment, waste, agricultural chemicals and market ready packaging materials
  - ❒ In a clean and dry location
  - ❒ With labels/identification intact and legible [name of product, active ingredient(s), concentration and the manufacturer's name and address are on the label; the manufacturer's contact information and the instructions for use do not need to be on the label but are readily available]
  - ❒ In a manner that maintains the integrity of the container/contents and prevents leakage (e.g., closed bag, in a closed container, with a lid)

Confirmation/Update Log:

Date						
Initials						

10. Waste Management

Forms Required	N/A

RATIONALE:

Proper waste management is required to prevent biological, chemical or physical contamination of your premises (e.g., culls left to rot in a pile near a building can attract pests).

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

10.1 Storage and Disposal of Garbage, Recyclables and Compostable Waste

REQUIREMENT	*Areas for garbage, recyclables and compostable waste (when applicable) must be identified, and all waste must be stored and disposed of in a manner to minimize contamination.*

PROCEDURES:

- The person responsible provides dedicated containers for waste that are:
  - ❒ In the appropriate areas/rooms (e.g., lunchroom, washroom, packinghouse, production site)
  - ❒ Separate from product, water sources and market ready packaging materials
  - ❒ Designated or labelled for each applicable type of waste (i.e., garbage, recyclables, compost, etc.)
  - ❒ Covered where pest or animal intrusion may be a problem
  - ❒ Of sufficient quantity and size
  - ❒ Cleaned thoroughly at least monthly (e.g., pressure washed, scrubbed, change plastic liners) in an area separate from product and market ready packaging materials

❒ The person responsible disposes of waste as soon as the container is full (or before) or as frequently as required to avoid attracting pests (e.g., flies, rodents)

10.2 Storage and Disposal of Empty Agricultural Chemical Containers

REQUIREMENT	*Empty agricultural chemical containers must be stored and disposed of in a manner that minimizes the potential for chemical contamination of product and the premises.*

PROCEDURES:

❒ The person responsible does not reuse empty agricultural chemical containers for any purpose, as prescribed by the *Pest Control Products Act* and *Regulations*

❒ The person responsible triple rinses containers and empties the rinsate into the applicator tank

- The person responsible stores empty agricultural chemical containers:
  - ❒ Separate from product, water sources and market ready packaging materials
  - ❒ In a designated or labelled area/container

❒ The person responsible disposes of empty agricultural chemical containers by following applicable federal, provincial, territorial and municipal regulations for disposal of empty containers

10.3 Disposal of Production Wastewater and Waste from Toilets and Hand Washing Facilities

REQUIREMENT	*Production wastewater and waste from toilets and hand washing facilities must be disposed of in a manner that minimizes biological and chemical contamination of product, water sources and the premises.*

PROCEDURES:

❒ The person responsible disposes of waste from toilets in a manner that prevents contamination of packaging materials, product, water sources, compost and other by-products

- The person responsible disposes of waste from toilets *(choose at least one of the following)*:
  - ❒ Into a septic system or municipal sewer system
  - ❒ By contracting with a portable toilet company or cleaning service
  - ❒ Other *(specify where and how waste is disposed of)*:

Describe: _____

_____

_____

❒ The person responsible disposes of waste from hand washing stations in a manner that prevents contamination of packaging materials, product, water sources, compost and other by-products

- The person responsible disposes of waste from hand washing stations *(choose at least one of the following)*:
  - ❒ Into a septic system or municipal sewer system
  - ❒ By contracting with a portable toilet company or cleaning service
  - ❒ Other *(specify where and how waste is disposed of)*:

Describe: _____

_____

_____

❒ The person responsible disposes of production wastewater in a manner that prevents contamination of packaging materials, product, water sources, compost and other by-products

❒ The person responsible disposes of production wastewater by *(specify where and how wastewater is disposed of)*:

Describe: _____

_____

_____

Confirmation/Update Log:

Date						
Initials						

11. Personal Hygiene Facilities

Forms Required	A, J

RATIONALE:

Humans may be a source of biological contamination (e.g., Hepatitis A, Salmonella, *E. coli* O157:H7) especially if unable to properly wash their hands. Therefore, it is important to provide personal hygiene facilities and to keep them well-maintained.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

11.1 Facilities

REQUIREMENT	*Sufficient personal hygiene facilities must be available. All facilities must be accessible, properly stocked, cleaned and well-maintained.*

PROCEDURES:

In the Production Site

! ● Personal hygiene facilities are provided for employees in the production site or in the header house/entrance/service room/connecting house, and include:

  ! • Properly stocked hand washing facilities that are easily accessible

    • ***Note:*** *Hand washing water stored in permanent tanks within portable washrooms is not considered potable UNLESS:*
    - the water is tested each time the tank is filled to confirm potability, OR
    -the water is treated and tested to confirm potability is being maintained with treatment as per procedures in Section 15.3 Treatment*, OR*
    - the cleanliness of the tank is maintained, filling procedures are followed and the water is tested to confirm potability as per procedures in Section 15.2 Storage

  Choose at least one of the following 3 options (The items within each option are to be used ONLY in the order that they appear):

  ! ❒ hot and/or cold running **potable** water (with a receptacle to collect wastewater), soap and disposable paper towels

  OR

  ! ❒ water (with a receptacle to collect wastewater), paper towel to dry hands and hand sanitizer

  OR

  ! ❒ hand wipes and hand sanitizer

  AND

  ❒ a garbage container

  ❒ all hand washing facilities have hand washing signs with understandable instructions (e.g., appropriate language for employees, pictograms) *Refer to Appendix I -- Hand Washing Sign Templates*

! ● Personal hygiene facilities are provided for production site employees and include: *Choose at least one of the following options:*

- ❒ Access to washrooms in an adjacent building
- ❒ Washrooms in the header house/entrance/service room/connecting house
- ❒ Washroom in the production site

AND

- ❒ There is 1 toilet per 35 employees and they are fully equipped (i.e., toilet paper and self-closing door)

! ❒ Weekly (while in use) and daily (during the peak season) – The person responsible cleans and maintains the personal hygiene facilities and records the activity on Form (J) Cleaning and Maintenance – Personal Hygiene Facilities OR _____

In the Packinghouse/Product Storage *[If not applicable, proceed to the sub-section: Other Facilities in the Production Site and Building(s)]*

! ❒ Annually – The person responsible records all locations of personal hygiene facilities on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

_____

! ● The person responsible provides personal hygiene facilities in the packinghouse/product storage including:

! • Properly stocked hand washing facilities

- ***Note:*** *Hand washing water stored in permanent tanks within portable washrooms is not considered potable UNLESS:*
  - the water is tested each time the tank is filled to confirm potability, OR
  -the water is treated and tested to confirm potability is being maintained with treatment as per procedures in Section 15.3 Treatment*, OR*
  - the cleanliness of the tank is maintained, filling procedures are followed and the water is tested to confirm potability as per procedures in Section 15.2 Storage

Choose at least one of the following 3 options (The items within each option are to be used ONLY in the order that they appear):

! ❒ hot and/or cold running **potable** water (with a receptacle to collect wastewater), soap and disposable paper towels

OR

! ❒ water (with a receptacle to collect wastewater), paper towel to dry hands and hand sanitizer

OR

! ❒ hand wipes and hand sanitizer

AND

- ❒ a garbage container
- ❒ all hand washing facilities have hand washing signs with understandable instructions (e.g., appropriate language for employees, pictograms) *Refer to Appendix I -- Hand Washing Sign Templates*

- Washrooms:
  ! ❒ in the packinghouse/product storage

  OR

  ! ❒ in the immediate vicinity of the packinghouse/product storage (e.g., portable toilet, residence, bunkhouse)

- Washrooms include:
  - ❒ 1 toilet per 35 employees
  - ❒ Fully equipped facilities (i.e., toilet paper and self-closing door)
  - ❒ If the washroom is in the vicinity of the packinghouse/product storage, describe where it is located: _____

! ❒ Weekly (while in use) and daily (during the peak season) – The person responsible cleans and maintains the personal hygiene facilities and records the activity on Form (J) Cleaning and Maintenance – Personal Hygiene Facilities OR _____

Other Facilities: In the Production Site and Building(s) (e.g., lunchroom, break area)

- The person responsible provides:
  - ❒ Fully stocked first aid kits
  - ❒ Waterproof covering for bandaged wounds on hands (e.g., rubber gloves)

❒ The person responsible provides a dedicated storage area for personal effects separate from product handling areas and washrooms

❒ The person responsible provides a dedicated lunchroom/break area separate from product handling areas

❒ The person responsible ensures employees remove working effects prior to entering washrooms and before breaks (e.g., reusable gloves/aprons)

❒ The person responsible ensures employees store working effects in a designated location separate from break areas, surfaces where food is prepared or eaten and other sources of potential contamination

Confirmation/Update Log:

Date						
Initials						

12. Employee Training

Forms Required	C, D, K

RATIONALE:

Employees must be trained on good personal hygiene practices and safe product handling to help prevent the biological, chemical and physical contamination of product. Job-specific training is also important to ensure food safety related practices are adhered to.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

12.1 Employee Training

REQUIREMENT	*All employees must receive training on their role in food safety, food handling, personal hygiene practices, biosecurity and any other area related to food safety for their job. Senior management must demonstrate its commitment to determining and providing, in a timely manner, all the resources needed to implement and improve the processes of the food safety system.*

PROCEDURES:

❒ Responsibility for overseeing employee training is assigned to [record name here: _____], who becomes the "person responsible" below

- Annually – The person responsible uses the following Employee Personal Hygiene and Food Handling Practices Policy Forms for training *(check those that are applicable)*:
  - ❒ Form (C) Employee Personal Hygiene and Food Handling Practices Policy – Production Site
  - ❒ Form (D) Employee Personal Hygiene and Food Handling Practices Policy – Packinghouse/Product Storage

- The person responsible provides training:
  - ❒ To all employees at the beginning of each season
  - ❒ To new employees
  - ❒ As a refresher to reinforce good practices (i.e., as a result of non-conformances or mid-way through the season)
  - ❒ To provide feedback from an audit, or information on new techniques, new science or other technical findings

❒ Person responsible provides training and training materials in a language and comprehension level applicable to employee(s) (Refer to the CanadaGAP web site to obtain training materials: www.canadagap.ca)

❒ Person responsible records employee personal hygiene and food handling practices training activities and employees' attendance on Form (K) Training Session OR _____

❒ The person responsible observes employees for compliance with the personal hygiene and food handling practices policy

- ❒ The person responsible trains employees to stop and report to the person responsible immediately if any broken glass is observed while harvesting (i.e., panes, bulbs)

- ❒ The person responsible trains employees to touch only the sides of the ladders, not the rungs, to avoid contaminating their hands while using or carrying the ladder

- ❒ The person responsible trains employees on minor and major food safety deviations (*Refer to Section 23: Deviations and Crisis Management)*

- ● The person responsible provides job-related training to employees performing tasks that could lead to biological, chemical or physical contamination of product *(check those that are applicable)*:
  - ❒ Calibration of production site equipment
  - ❒ Calibration of building equipment
  - ❒ Use of cleaning and maintenance materials (including water treatment chemicals)
  - ❒ Production site equipment cleaning and maintenance procedures (e.g., cutting and trimming tools, knives)
  - ❒ Building equipment cleaning and maintenance procedures
  - ❒ Record keeping procedures (i.e., forms applicable to job)
  - ❒ Application of agronomic inputs
  - ❒ Harvesting procedures
  - ❒ Sorting, grading and packing procedures

12.2 Employee Illness

REQUIREMENT	*The person responsible must be aware of and know how to manage the risks associated with illnesses transferable to food. All employees must be informed of their role in the potential transfer of illness to food and trained to report illnesses or symptoms to their supervisor.*

PROCEDURES:

- ❒ The person responsible abides by appropriate legislation (e.g., human rights, privacy, employment standards) and operation policies (written and verbal)

- ❒ The person responsible is aware that there are illnesses transferable to food (e.g., Hepatitis A, Salmonella, *E. coli* O157:H7)

- ❒ The person responsible informs employees to see a doctor if they are ill and excludes employees with symptoms of an active infectious disease from activities that may contaminate product, packaging or food contact surfaces

- ❒ The person responsible is alert to signs of employee illness, and encourages those employees to seek medical attention as soon as possible

- ❒ If the person responsible is advised that an employee has an illness transferable to food (e.g., Hepatitis A, Salmonella, *E. coli* O157:H7), advice, guidance and collaboration is sought with their local public health authority including advice on when the employee can return to work

- ❒ The person responsible keeps all records confidential, including copies of correspondence, doctor's notes, etc. in a secure location that is not accessible to unauthorized people

Confirmation/Update Log:

Date						
Initials						

13. Visitor Policy

Forms Required	L

RATIONALE:

Restricting visitors from areas where product or market ready packaging materials are handled or stored helps to prevent contamination.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

13.1 Visitor Protocols

REQUIREMENT	*Visitors must adhere to protocols when on the premises so as not to be a source of contamination.*

PROCEDURES:

❒ The person responsible determines controlled-access areas within the production site(s) and building(s) including areas where harvested and market product and market ready packaging materials are handled or stored, and controls access to those designated areas (e.g., puts up signs, walls) *Refer to Appendix J -- Controlled Access Area Sign Templates*

❒ The person responsible accompanies or designates a person to accompany first time visitors entering controlled-access areas

❒ The person responsible ensures visitors are informed of and understand the visitor policy on Form (L) Visitor Sign-In Log OR _____

❒ The person responsible or designated person ensures all visitors entering controlled-access areas sign in using Form (L) Visitor Sign-In Log OR _____

Confirmation/Update Log:

Date						
Initials						

Forms Required	A, E, G, M

14. Pest Program for Production Sites and Buildings

RATIONALE:

Pests such as rodents, birds and insects are potential sources of contamination to product as they may carry a variety of pathogens. The use of traps, chemicals, tape or bait, and monitoring these continually can be effective in controlling pests.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

14.1 Control and Monitoring

REQUIREMENT	*An effective pest program must be in place for the exterior and interior of production sites and buildings to monitor and control pests.*

Note: *This section does not apply to stand-alone agricultural chemical storage buildings.*

PROCEDURES

❒ The person responsible completes pest risk assessment for the interior and exterior of production sites and buildings by reviewing Sections 2.1, 2.2, 2.3 and 2.4 and Form (G) Cleaning, Maintenance and Repair of Production Sites and Buildings OR _____

_____

❒ The person responsible prevents nesting of birds on the interior and exterior of production sites and buildings

❒ The person responsible does NOT allow animals including pets into production sites and buildings

- The person responsible uses traps in production sites and buildings and ensures that:
  - ❒ They are flush against the wall
  - ❒ If using bait inside buildings, it is in a trap from which rodents cannot escape (e.g., tin cat, iron cat, ketch-all)
  - ❒ They are set, at a minimum, on the inside of each entrance (doorways) on both sides (i.e., two traps per door)
  - ❒ Pest control products in bait or baited traps are registered for use in Canada

NOTE: Snap traps may be used inside production sites and buildings, but cannot be baited.

! ❒ The person responsible adheres to a pest control and monitoring program. (You **MUST** choose <u>one</u> of the two options listed on the following page and complete the associated sub-bullets):

! ❒ **Third Party Pest Program**	! ❒ **Self-Managed Pest Program**
! ● The person responsible hires a licensed third party pest control company to monitor production sites and buildings (when in use). The company provides the person responsible with: ! ❒ A contract/agreement/letter of assurance showing company's name and the applicator's license number ! ❒ A written pest control manual detailing the procedures, pest control products used, PCP numbers, frequencies (minimum of once monthly) and methods used ! ● The company ensures that: ! ❒ Bait (unless inside a trap) is not used in the interior of production sites and buildings ! ❒ Bait is not in contact with product ! ❒ Pest control products are registered for use in Canada and used according to label directions ! ❒ All pest control devices are clearly numbered/labelled/identified ! ❒ The location of production site and building exterior and interior pest control devices is recorded and provided to the person responsible ! ❒ All leftover bait, damaged traps, used glue boards and pests are disposed of in a sealed container and placed in the garbage ! ❒ A record of detailed findings and suggested control measures are provided after each scheduled visit	! ● The person responsible implements a self-managed pest program. The person responsible ensures that: ! ❒ Bait (unless inside a trap) is not used in the interior of production sites and buildings ! ❒ Bait is not in contact with product ! ❒ Pest control products registered in Canada for this use and are used according to label directions ! ❒ All pest control devices are clearly numbered/labelled/identified ! ❒ The location of building exterior and interior pest control devices is recorded on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____ _____ ! ❒ All leftover bait, damaged traps, used glue boards and pests are disposed of in a sealed container and placed in the garbage ! ❒ After handling bait, devices, or disposing of pests, proper hand washing techniques are followed ! ❒ The person responsible records PCP # on Form (E) Pest Control for Production Sites and Buildings OR _____ _____ _____
! ❒ After each visit, the person responsible reviews the record left by the company and signs the record for confirmation of activities	! ❒ Annually – The person responsible describes the pest program on Form (E) Pest Control for Production Sites and Buildings OR _____ _____
! ❒ The person responsible files all records under Tab: Third Party Pest Control Records OR _____ _____	! ❒ Monthly (when in use) – The person responsible monitors the pest program and records findings on Form (M) Pest Monitoring for Production Sites Buildings OR _____ _____
❒ Annually - The person responsible reviews the company's program (procedures, numbering of devices, monitoring frequency, etc.) for effectiveness	❒ If a persistent problem, pattern or increases in pest populations are observed, the person responsible takes corrective action and/or seeks expert advice on alternative control measures

14.2 Storage

❍ Pest control products are stored on the premises

If the above circle has been checked off, proceed below.
If not, proceed to Section 15: Water (for Fluming and Cleaning).

REQUIREMENT	*Pest control products must be stored in designated areas and under the proper conditions.*

PROCEDURES:

! ❒ Annually – The person responsible records where pest control products are stored on Form (A) Buildings Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

- The person responsible stores pest control products:
  - ❒ Separate from product and packaging materials
  - ❒ In a covered, clean and dry location if necessary
  - ❒ With labels/identification intact and legible if applicable (e.g., name of product, active ingredient(s), concentration, PCP#)
  - ❒ In a manner that maintains the integrity of the container and its contents

Confirmation/Update Log:

Date						
Initials						

15. Water (for Fluming and Cleaning)

Forms Required	A, F, N1, N2

RATIONALE:

Water may be used in an operation for a number of different reasons, using a variety of practices. It is important to assess the quality of the water as it may be a source of biological or chemical contamination. When warm tomatoes are submerged in cold water, water can be drawn inside the tomato. Water quality and temperature are important to maintain any time tomatoes are submerged in water because contamination inside the tomato cannot be washed off.

- ❍ Water is used for cooling, fluming, washing or rinsing of product
- ❍ Water is used for cleaning equipment, containers, buildings, etc.
- ❍ Water is used in personal hygiene facilities for hand washing

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 16: Ice.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

15.1 Water Assessment

REQUIREMENT	*Water source must be identified and potential hazards assessed. The required preventative measures must also be determined and implemented to prevent biological (pathogenic bacteria, parasites and viruses) and chemical contamination.*

PROCEDURES:

❒ The person responsible never uses untreated sewage

❒ If an abnormal event occurs to cause contamination of the water (e.g., chemical leakage, leaching of well by overland flooding, municipal boil water advisory), the person responsible does not use the water until remediation is possible to eliminate the contaminant or testing (i.e. contaminant [e.g. agricultural chemical] is known and tests are available) indicates the water is safe to use

! ● Annually – By completing or updating Form (F) Water (for Fluming and Cleaning) Assessment OR _____, the person responsible:

- ! ❒ Identifies the water sources
- ! ❒ Describes the intended use of each water source
- ! ❒ Describes the method of application
- ! ❒ Assesses the potential hazards for each source considering its use
- ! ❒ Determines the appropriate action or preventative measures needed to control the hazards

***Note**: To assist with the assessment, the following MUST be adhered to:*

Private Well Water *(If not applicable, proceed to the next sub-section: Municipal Water)*

! ● At least twice annually – If water is from a private well, the person responsible tests the well water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025, to ensure that the well water is potable (File under Tab: Test Results) *Refer to Appendix G -- Water Testing*

- ! ❒ Once prior to use
- ! ❒ At least once more during the season to ensure water potability is being maintained

❒ The person responsible ensures the water sample is taken from the tap closest to the water source (unless water is being treated, in which case the sample is taken after treatment)

Municipal Water *(If not applicable, proceed to the next sub-section: Surface Water)*

❒ If water is provided by the municipality, the person responsible receives notification if the supply becomes contaminated along with the appropriate treatment method(s)

Surface Water *(If not applicable, proceed to the next sub-section: Water for Cooling, Fluming and Washing Product)*

! ● If water is from a surface water source, the person responsible:

- ! ❒ Follows a water treatment program to make it potable as per Section 15.3: Treatment below
- ! ● At least twice annually- tests the treated water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025, to ensure that the treated water is potable (File under Tab: Test Results) *Refer to Appendix G -- Water Testing*
  - ! ❒ Once prior to use
  - ! ❒ At least once more during the season to ensure water potability is being maintained

Water for Cooling, Fluming and Washing Product *(If not applicable, proceed to the next sub-section: Final Rinse Water)*

! ❒ Water used to fill or replenish flumes, dump tanks, buckets, drums or pits is from a **potable source**

! ❒ Water used for cooling, fluming or washing is **kept potable** if this is the final water in contact with product (i.e., there is no final rinse) *(check only if applicable)*

! ❒ **FOR TOMATO OPERATIONS ONLY** – (*if not applicable, proceed to the next sub-section: Final Rinse Water)* - If water potability is not maintained and tomatoes are immersed in water, the person responsible ensures that the tomatoes (inside core temperature) are **at least** 5.5°C or 10°F colder than the water temperature (i.e., water temperature is **at least** 5.5°C or 10°F warmer than the tomatoes) and records this activity on Form (N2) Water Temperature Control and Monitoring OR ___

Refer to Appendix L -- Temperature Monitoring For Internal Product And Water Temperature and Thermometer Use – An Example for instructions on how to take the internal temperature of tomatoes.

Refer to the following to help with the assessment:

1. *Tomatoes coming directly from the production site may need to have the heat removed.*
2. *Tomatoes coming directly out of cold storage may not present a risk.*
3. *Water that is kept potable does not present a risk.*
4. *Water may be warmed to ensure the water is **at least** 5.5°C or 10°F warmer than the tomatoes.*

Note: *If water potability was not maintained AND the water/product temperatures were not monitored then ALL tomatoes are disposed of. They may not be rewashed/rinsed as internalization of pathogens may have already occurred and these can not be washed/rinsed off.*

Thermometers are checked for accuracy and calibrated or replaced when necessary. Refer to *Section 8.3: Calibration* and *Appendix L -- Temperature Monitoring For Internal Product And Water Temperature and Thermometer Use – An Example* for guidelines on checking the accuracy of a thermometer

Final Rinse Water *(If not applicable, proceed to the next sub-section: Water for Cleaning)*

! ❒ If water used to cool, flume or wash product has not been kept potable, the person responsible provides a **final potable water rinse**

❒ If the person responsible is using water only for a final rinse, water is potable

! ● At least twice annually– If providing a final rinse, the person responsible tests the water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025, to ensure that the water (even if it is from a municipal source) is potable (File under Tab: Test Results) *Refer to Appendix G -- Water Testing*

- ! ❒ Once prior to use
- ! ❒ At least once more during the season to ensure water potability is being maintained

❒ The person responsible ensures water sample is taken directly from rinse equipment when testing for potability

Note: *If there are multiple packing lines or rinsing equipment EACH one (e.g., set of nozzles on each packing line not individual nozzles, hose, etc.) must be tested twice. Contamination can occur in the equipment itself and this needs to be assessed.*

Water for Cleaning (equipment, buildings, containers, etc. and hand washing in personal hygiene facilities)

! ● The person responsible uses **potable** water:

- ! ❒ For cleaning buildings, equipment, containers, etc.
- ! ❒ In personal hygiene facilities for hand washing

15.2 Storage

❍ Water for fluming and cleaning is stored, *proceed below.*
If not, proceed to Section 15.3: Treatment.

REQUIREMENT	*Cisterns, tanks or containers used to store water may be a source of contamination. Water must be stored in clean cisterns, tanks and/or containers.*

PROCEDURES:

Note: *Hand washing water stored in permanent tanks within portable washrooms is not considered potable UNLESS:*

- the water is tested each time the tank is filled to confirm potability, OR
- the water is treated and tested to confirm potability is being maintained with treatment as per procedures in Section 15.3 Treatment*, OR*
- the cleanliness of the tank is maintained, filling procedures are followed and the water is tested to confirm potability as per procedures in Section 15.2 Storage

❒ Annually - The person responsible records location of water storage tank/container/cistern on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

! ● Annually (prior to use) and monthly (during use) - The person responsible ensures that the water storage tank/cistern/container is clean by:

Cleaning Procedure*:*

- ❒ Washing with (choose at least one of the following options):
  - ❒ Water with friction (e.g. pressure wash, wiping, scrubbing)
  - ❒ Water and a sanitizer (e.g., chlorine, quaternary ammonium)
  - ❒ Water and soap

❒ Describe your step-by-step cleaning instructions [include any soaps or sanitizers, concentrations and equipment used (*refer to Appendix B: Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example for examples of chlorine solutions for equipment cleaning, Appendix H: Cleaning and Treating Cisterns – An Example and Appendix N: Sanitation Standard Operating Procedures (SSOP) – An Example),]*:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

[Filling in the above description completes your Sanitation Standard Operating Procedure (SSOP) for cleaning your water storage tank/container/cistern.]

! ❒ Annually (prior to use) and monthly (during use) – The person responsible records cleaning of water storage on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

● Each time the tank/cistern/container is filled – The person responsible ensures that:

❒ A description of the step-by-step filling instructions is given for each water source used:

Identify your water source: _____

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

[Filling in the above description completes your Standard Operating Procedure (SOP) for filling your water storage tank/container/cistern. ***Complete a different SOP for each water source, type of tank/container/cistern or filling mechanism***.]

- The person responsible ensures that:
  - ❒ Filling mechanism (e.g. hose) is not a source of contamination
  - ❒ Employees filling tank/cistern/containers are not a source of contamination

- During Filling:
  - ❒ Contamination does not occur from outside sources (e.g., dirty hose, tank opening or lid not clean etc.)
  - ❒ Tank/cistern/container must be closed immediately after filling
  - ❒ The part of the tank/cistern/container where the water is emptied from (e.g., spigot, tap, opening, etc.) is kept free from contamination.

! - Regardless of water source (e.g., rain, municipal, private well water) - At least twice annually and after abnormal events – the person responsible tests water from the tank/container/cistern for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025, to ensure that the water is potable (File under Tab: Test Results). *Refer to Appendix G -- Water Testing*
  - ! ❒ After cleaning, but prior to use
  - ! ❒ At least once more during season to ensure water potability is being maintained
  - ! ❒ After abnormal events

❒ The person responsible ensures the water storage tank, container or cistern has a lid, is free from rust, is closed and is protected from chemical contamination when not in use

15.3 Treatment

REQUIREMENT	*The treatment of water (for fluming and cleaning) with chlorine or other methods must be controlled and monitored to ensure appropriate chemical concentrations or functioning of the equipment and to prevent both the biological (pathogenic bacteria, parasites and viruses) and chemical contamination of product.*

PROCEDURES:

❍ Water is treated, *proceed below.*
If not, proceed to Section 16: Ice.

! - When treating water the person responsible (*choose those that are applicable*):

! ❒ Follows instructions in *Appendix A -- Shock Chlorination of Well Water – An Example* OR _____

! ❒ Follows instructions in *Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example* OR _____

! ❒ Follows instructions in *Appendix H -- Cleaning and Treating Cisterns – An Example* OR _____

! ❒ Other instructions *(specify or describe)*: _____

! ❒ Uses an alternative method to chlorination (e.g., hydrogen peroxide, ozone, ultra violet light, reverse osmosis) as per manufacturer's instructions (*describe method):* _____

! ❒ Records the control and monitoring of alternative water treatment on (*indicate name and location of form*): _____

(File under Tab: _____)

Note: *Seek expert or professional advice for proper setup and monitoring of alternative water treatment systems.*

! ❒ If adding water treatment aids (i.e. chlorine) manually and monitoring treatment with chlorine/pH strips or ORP, the person responsible establishes a standard operating procedure following instructions in *Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example OR:* _____ AND fills out the right hand column of the chart below

Volume of water in wash tank or system:	
Water treatment used (e.g., *5.25% household bleach*):	
Initial amount of treatment chemical added and target concentration (ppm) (e.g., ¾ *cups of chlorine per 50 gallons to reach 50 ppm*):	
What are you using to monitor levels (*e.g., chlorine strips/pH strips, ORP*)?	
How often do you check treatment levels (*e.g., every hour during use)*?	
How often is water changed (*e.g., daily, weekly)*?	
What is the target level (for ORP/chlorine/pH)?	ORP =700 or greater; pH=6-0-7.5; free chlorine =between 2-7 ppm Other:

Actions taken if:

ORP is between 650-700 (*e.g. add 3/4 cups of chlorine per 50 gallons)*	Add:_____ Recheck ORP/free chlorine/pH and record on Form N1 or _____
ORP is below 650 or free chlorine is below 2ppm *(e.g. add 2 cups of chlorine)*	Discard or rewash any product that has come in contact with contaminated water (TOMATOES must be disposed of)

! ❒ Daily (for chlorination) – The person responsible controls and monitors (as applicable) chlorine/pH levels or Oxidation-Reduction Potential (ORP) in water and records this on Form (N1) Water Treatment Control and Monitoring OR

! ❒ Daily (for alternative water treatment methods) – The person responsible monitors the equipment for proper functioning and records this on (*indicate name and location of form*): _____

(File under Tab: _____)

! ● At least twice annually– The person responsible tests the treated water for Total Coliforms and *E. coli* using an accredited lab where analyses are performed to standards equivalent to ISO 17025, to ensure that the water is potable (File under Tab: Test Results) *Refer to Appendix G -- Water Testing and Appendix B: Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example.*

! ❒ Once prior to use

! ❒ At least once more during the season to ensure water potability is being maintained

❒ The person responsible ensures the water sample is taken directly from the equipment when testing treated water for potability

Confirmation/Update Log:

Date						
Initials						

16. Ice

Forms Required	N/A

Ice is not used in the production or packing of greenhouse product.

17. Packaging Materials

Forms Required	A, I, Q

RATIONALE:

Packaging materials that are not handled or stored properly may contribute to the biological, chemical and physical contamination of product.

- ❍ Harvested product packaging materials are on the premises, either with product in them or not
- ❍ Market ready packaging materials are on the premises, either with product in them or not
- ❍ Packaging accessories are on the premises

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 18: Growing and Harvesting.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

17.1 Purchasing and Receiving

REQUIREMENT	*Packaging materials must be obtained with knowledge of origin and must be appropriate for use in the packaging of product.*

PROCEDURES:

Harvested Product Packaging Materials

- The person responsible purchases or selects materials that are:
  - ❒ Free of objects that may become embedded in product (e.g., material is in good repair, no splinters, glass)
  - ❒ Clean and free of debris (e.g., from other crops, compostable waste, garbage)
  - ❒ Have not been used for any other purpose that may be a source of contamination (e.g., to carry tools, personal effects, cleaning agents, agricultural chemicals, maintenance materials)

❒ The person responsible receives only the materials that were purchased or selected

Market Ready (Primary and Secondary) Packaging Materials

❒ When purchasing or selecting packaging materials, the person responsible is aware of their origin (i.e., manufactured with components that are not a source of chemical contamination)

- The person responsible purchases or selects **primary** materials (e.g., clamshells, bags, boxes) that are *(choose one of the following)*:
  - ❒ New, OR
  - ❒ If reused, new liners/trays are used (***Note***: *Liners/trays are considered packaging accessories, not primary packaging materials)* unless the materials are non-porous and are cleaned before use (see Section 17.2)

❒ The person responsible purchases or selects materials (e.g., masters) that are free of loose objects that may become embedded in product (e.g., splinters, glass)

❒ The person responsible receives only the materials that were purchased or selected

***Note**: For materials, refer to Appendix D -- Reference Lists: Packaging Materials, Inks, Lubricants, Maintenance Materials, Sanitizers, Water Treatment Aids and Food and Incidental Additives.*

Packaging Accessories

❒ When purchasing or selecting packaging accessories, the person responsible is aware of their origin (i.e., manufactured with components that are not a source of chemical or physical contamination)

❒ The person responsible purchases or selects new packaging accessories (e.g., liners, trays, ties, tags, rubber bands) if coming into direct contact with product

❒ The person responsible receives only the packaging accessories that were purchased or selected

***Note**: For packaging accessories, refer to Appendix D -- Reference Lists: Packaging Materials, Inks, Lubricants, Maintenance Materials, Sanitizers, Water Treatment Aids and Food and Incidental Additives.*

17.2 Use of Packaging Materials

REQUIREMENT	*Harvested product packaging materials must be clean and properly maintained and repaired before use, and market ready primary packaging materials and accessories must not be a source of contamination.*

PROCEDURES:

Harvested Product Packaging Materials

- The person responsible uses materials that are:
  - ❒ Free of objects that may become embedded in product (e.g., material is in good repair, no splinters, glass)
  - ❒ Clean and free of debris (e.g., from other crops, compostable waste, garbage)
  - ❒ Have not been used for any other purpose that may be a source of contamination (e.g., to carry tools, personal effects, cleaning agents, agricultural chemicals, maintenance materials or previously used to harvest other crops where agricultural chemical residues may contaminate product)
  - ❒ Any materials that have been used for other purposes are clearly marked (e.g. with paint) so they will not subsequently be used for product

Market Ready Primary Packaging Materials

- The person responsible uses materials that are:
  - ! ❒ New or reusable containers that are in good repair
  - ! ❒ Reusable containers made of porous materials (e.g., wood, wicker, cardboard) with a new liner
  - ! ❒ Reusable containers made of non-porous materials (e.g., plastic, stainless steel) with a new liner OR are cleaned before use by washing with *(choose at least one of the following options)*:

! ❒ water with friction (e.g. pressure wash, wiping, scrubbing)
! ❒ water and a sanitizer (e.g., chlorine, quaternary ammonium)
! ❒ water and soap

! ❒ The person responsible describes the step-by-step cleaning instructions [include any soaps or sanitizers, concentrations and equipment used (*refer to Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment - An Example, for suggested chlorine solutions for cleaning and Appendix N -- Sanitation Standard Operating Procedures (SSOP) – An Example)]*:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

[Filling in the above description completes your Sanitation Standard Operating Procedure (SSOP) for cleaning of packaging materials.]

- The person responsible uses materials that are:
  - ❒ Not previously used for any other purposes that may be a source of contamination (e.g., to carry tools, personal effects, cleaning agents, agricultural chemicals, maintenance materials)
  - ❒ Any materials that have been used for other purposes are clearly marked (e.g. with paint, marker) so they will not subsequently be used for product
  - ❒ Handled in a way that maintains their integrity (e.g., protected from the elements, protected from chemicals, properly stacked, etc.)
  - ❒ Are kept off the ground (e.g., placed on a cardboard slipsheet/pallet liner that is not a source of contamination) whether in the production site or on platforms, stairs and catwalks where employees walk etc.
- Labelled with the correct identifying information (i.e., name and address) of:
  - ❒ The operation that produced the product, **OR**
  - ❒ The operation that packaged the product, **OR**
  - ❒ The company for whom it was produced/packaged
- Labelled with Pack ID if there is no secondary packaging materials
  - ❒ Who produced the product **AND**
  - ❒ When the product is packed

Note: Refer to Section 22: Identification and Traceability for more information on labelling requirements

! ❒ The person responsible conducts a visual inspection of all materials before use and records this information for each product lot on Form (Q) – Packing and Storing Market Product OR _____

! ❒ The person responsible records cleaning of reusable packaging materials on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

_____

Market Ready Secondary Packaging Materials

- The person responsible uses materials that are:
  - ❒ Clean, free of debris and in good repair
  - ❒ Have not been used for any other purposes that may be a source of contamination (e.g., to carry tools, personal effects, cleaning agents, agricultural chemicals, maintenance materials)
  - ❒ Any materials that have been used for other purposes are clearly marked (e.g. with paint, marker) so they will not subsequently be used for product
  - ❒ Handled in a way that maintains their integrity (e.g., protected from the elements, protected from chemicals, properly stacked, etc.)
  - ❒ Are kept off the ground (e.g., placed on a cardboard slipsheet/pallet liner that is not a source of contamination) whether in the production site or on platforms, stairs and catwalks where employees walk, etc.
- Labelled with the correct identifying information (i.e., name and address) of:
  - ❒ The operation that produced the product, **OR**
  - ❒ The operation that packaged the product, **OR**
  - ❒ The company for whom it was produced/packaged
- Labelled with the Pack ID
  - ❒ Who produced the product **AND**
  - ❒ When the product is packed

Note: Refer to Section 22: Identification and Traceability for more information on labelling requirements

If there is NO market ready primary OR secondary packaging materials used, the person responsible labels the pallet/skid with:

- The correct identifying information (i.e., name and address) of:
  - ❒ The operation that produced the product, **OR**
  - ❒ The operation that packaged the product, **OR**
  - ❒ The company for whom it was produced/packaged
- The Pack ID
  - ❒ Who produced the product **AND**
  - ❒ When the product is packed

Note: Refer to Section 22: Identification and Traceability for more information on labelling requirements

Packaging Accessories

❒ The person responsible uses only **new** packaging accessories such as liners, trays, shrink and pallet wrap, labels, coupons, tags, ties and staples

❒ The person responsible may reuse packaging accessories that do not come into direct contact with the product such as pallet dividers, slats and rope

17.3 Storage

- ❍ Harvested product packaging materials are stored on the premises
- ❍ Market ready packaging materials are stored on the premises
- ❍ Packaging accessories are stored on the premises

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 18: Growing and Harvesting.

REQUIREMENT	*Packaging materials must be stored in designated areas and under the proper conditions to prevent biological, chemical and physical contamination.*

PROCEDURES:

! ❒ Annually - The person responsible records the storage locations for market ready packaging materials and accessories on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

Harvested Product Packaging Materials

❒ The person responsible stores these separate from potential sources of contamination and damage (e.g., equipment, fuels, agricultural chemicals)

Market Ready Primary and Secondary Packaging Materials and Accessories

- The person responsible stores these:
  - ❒ In a clean, covered, dry location and off the ground (e.g., on a shelf or pallet)
  - ❒ Separate from potential sources of contamination and damage (e.g., product, water, equipment, fuels, agricultural chemicals)
  - ❒ At least 8 cm away from any wall

Confirmation/Update Log:

Date						
Initials						

18. Growing and Harvesting

Forms Required	H1, H2, P, Q, R

RATIONALE:

Product harvested less than four months after the application of manure may be a source of biological contamination. Similarly, product harvested before a pre-harvest interval (PHI) has elapsed may be a source of chemical contamination. Product release procedures include checking that the appropriate intervals have elapsed, and that the production site is assessed before harvest. The product itself, packaging materials and anything else that may contribute to contamination is to be considered both before and during harvest.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

18.1 Growing

Note*: Refer to Sections 3, 4, 5, 6, 7 for requirements and procedures related to inputs used during the growing period.*

18.2 Harvesting

REQUIREMENT	*Product must be harvested at appropriate times to minimize the source of contamination. Product, packaging materials and other substances' (e.g,, weed, biological control, water, glass) risk must be assessed so as to not be a source of biological, chemical or physical contamination.*

PROCEDURES:

! ● Before harvesting – The person responsible refers to Forms (H1) and (H2) Agronomic Inputs and ensures that:
  - ! ❒ A minimum 120 day period has elapsed between the spreading of manure and the initial harvest period
  - ! ❒ The required pre-harvest interval (PHI) has elapsed between the application of agricultural chemicals and the initial harvest

❒ Before harvesting – The person responsible surveys the production site to ensure there are no signs of obvious contamination (e.g., oil or chemical spill, portable toilet leaking, flooding, animal intrusion, etc.)

❒ During harvest – The person responsible ensures that product is protected from contamination [e.g., water dripping when harvesting or transferring product (e.g., trays, rafts, roots)]

❒ Employees visually inspect product and surrounding area for glass and if glass is observed (i.e., broken panes, bulbs), the employee immediately ceases harvesting and reports to the person responsible.

● If glass is observed, the person responsible immediately:
  - ❒ Closes off the affected area (e.g., ropes, tape)
  - ❒ Cleans up the glass

- ❒ Disposes of any affected or potentially affected product
- ❒ Completes Form (R) Deviations and Corrective Actions OR _____

_____

! ● The person responsible records all harvesting information:

! ❒ If harvesting into **harvested product packaging materials**, by completing Form (P) Harvesting and Storing Product OR _____

! ❒ If harvesting into **market ready packaging materials**, by completing Form (Q) Packing and Storing Market Product OR _____

Confirmation/Update Log:

Date						
Initials						

Forms Required	P, Q

19. Sorting, Grading, Packing and Storing

RATIONALE:

Product that is properly handled or packed will have a reduced likelihood of biological, chemical and physical contamination.

- ❍ Product is sorted or graded
- ❍ Product is packed
- ❍ Product is stored (only applicable if storing someone else's product),

*If **ANY** of the above circles has been checked off, proceed below.*
If not, proceed to Section 20: Storage of Product.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

19.1 Selecting/Purchasing and Receiving Harvested/Market Product

- ❍ Harvested product is selected/purchased
- ❍ Market product is selected/purchased

If **ANY** of the above circles has been checked off, *proceed below.*
If not, proceed to Section 19.2: Sorting and Grading.

REQUIREMENT	*Harvested/market product must be selected/purchased and received to not be a source of contamination.*

PROCEDURES:

❒ The person responsible selects/purchases harvested/market product from CanadaGAP-certified operations and requests a copy of the certificate or requests a letter of assurance from non-certified operations

! ❒ The person responsible receives only the harvested/market product that was selected/purchased along with the certificate or letter of assurance (one letter per season per supplier) (File under Tab: Letters of Assurance/Certificates)

❒ The person responsible inspects the received harvested/market product for sources of contamination (e.g., glass, rodent droppings/feces) and if contamination is observed, they notify the operation of the problem and take appropriate action (e.g., sorts, grades, trims, removes contamination, refuses product, etc.)

19.2 Sorting and Grading

REQUIREMENT	*Harvested product, in the production site or in the packinghouse, must be sorted and graded in a manner that minimizes sources of biological, chemical and physical contamination.*

PROCEDURES:

In the Production Site

- During sorting and grading, employees:
  - ❒ Separate foreign objects (e.g., plastic clips, hooks), damaged or rotten product and crop debris (e.g., stems, leaves) from marketable product
  - ❒ Discard foreign objects, culls and debris in the appropriate location (i.e., back into the production site, labelled container)

In the Packinghouse

- During sorting and grading, employees or equipment:
  - ❒ Separate foreign objects (e.g., plastic clips, hooks), damaged or rotten product and crop debris (e.g., stems, leaves) from marketable product
  - ❒ Discard foreign objects, culls and debris in the appropriate container
  - ❒ Discard or return product to the beginning of the cleaning process if it becomes contaminated (e.g., falls on the floor)

19.3 Packing

REQUIREMENT	*Harvested and market product, whether out in the production site or in the packinghouse, must be packed in a manner that minimizes sources of biological, chemical and physical contamination.*

PROCEDURES:

In the Production Site

❍ Packing is done in the production site, *proceed below.*
If not, proceed to the next sub-section: In the Packinghouse.

- The person responsible records all packing information by completing:

❒ Form (P) Harvesting and Storing Product OR _____

AND/OR

❒ Form (Q) Packing and Storing Market Product OR _____

In the Packinghouse

❍ Packing is done in the packinghouse, *proceed below.*
If not, proceed to Section 20: Storage of Product.

❒ The person responsible records all packing information by completing Form (Q) Packing and Storing Market Product OR _____

Confirmation/Update Log:

Date						
Initials						

20. Storage of Product

Forms Required	A, P, Q

RATIONALE:

Proper storage of product will reduce the risk of biological, chemical and physical contamination.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

20.1 Storage Conditions for Harvested Product

❍ Product is temperature conditioned, held or stored in harvested product packaging materials, *proceed below.*
If not, proceed to Section 20.2: Storage Conditions for Market Product.

REQUIREMENT	*Harvested product must be held or stored in designated areas and handled under the proper conditions to minimize contamination.*

PROCEDURES:

! ❒ Annually – The person responsible records the storage locations for harvested product on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

Temperature Conditioning [(Pre-) Cooling]

❍ Harvested product is temperature conditioned on the premises, *proceed below*.
If not, proceed to the next sub-section: Holding.

- The person responsible (pre-) cools harvested product to a predetermined temperature in an environment that:
  - ❒ Does not contaminate product (e.g., clean tarping material is used, proper air flow)
  - ❒ Prevents contact between harvested and market product
  - ❒ Is separate from equipment, fuels, agricultural chemicals and packaging materials

Holding

❍ Harvested product is held on the premises, *proceed below.*
If not, proceed to the next sub-section: Storage.

- The person responsible holds harvested product in an environment that:
  - ❒ Does not contaminate the product or the containers it is in (e.g., clean and well-maintained holding area)
  - ❒ Is separate from other product, equipment, fuels, agricultural chemicals, packaging materials and non-produce items

Storage

❍ Harvested product is put into storage on premises, *proceed below.*
If not, proceed to Section 20.2: Storage Conditions for Market Product.

- The person responsible stores harvested product:
  - ❒ In a predetermined environment (e.g., temperature is appropriate for product)

- ❒ In an environment that does not contaminate the product or the containers it is in (e.g., clean and well-maintained storage area)
- ❒ In a manner that prevents cross contamination from non-produce items
- ❒ Separate from other product, equipment, fuels, agricultural chemicals and packaging materials
- ❒ At least 8 cm away from any wall

❒ When harvested product is put into storage, the person responsible records all storing information by completing Form (P) Harvesting and Storing Product OR _____

20.2 Storage Conditions for Market Product

❍ Product is temperature conditioned, held or stored in market ready packaging materials, *proceed below.*
If not, proceed to Section 21: Transportation.

REQUIREMENT	*Market product must be held or stored in designated areas and handled under the proper conditions to minimize contamination.*

PROCEDURES:

! ❒ Annually – The person responsible records the storage locations for market product on Form (A) Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist OR _____

Temperature Conditioning [(Pre-) Cooling]

❍ Market product is temperature conditioned on the premises, *proceed below*.
If not, proceed to the next sub-section: Holding.

- The person responsible (pre-) cools market product to a predetermined temperature in an environment that:
  - ❒ Does not contaminate product (e.g., clean tarping material is used, proper air flow)
  - ❒ Prevents contact between harvested and market product
  - ❒ Is separate from equipment, fuels, agricultural chemicals and packaging materials

Holding

❍ Market product is held on the premises, *proceed below.*
If not, proceed to the next sub-section: Storage.

- The person responsible holds market product in an environment that:
  - ❒ Does not contaminate the product or the containers it is in (e.g., clean and well-maintained holding area)
  - ❒ Is separate from other product, equipment, fuels, agricultural chemicals, packaging materials and non-produce items

Storage

❍ Market product is put into storage on premises, *proceed below.*
If not, proceed to Section 21: Transportation.

- The person responsible stores market product:
  - ❒ In a predetermined environment (e.g., temperature is appropriate for product)
  - ❒ In an environment that does not contaminate the product or the containers it is in (e.g., clean and well-maintained storage area)

- ❒ Separate from other product, equipment, fuels, agricultural chemicals and packaging materials
- ❒ In a manner that prevents cross contamination from non-produce items
- ❒ At least 8 cm away from any wall
- ❒ Off the floor/ground

❒ When market product is put into storage, The person responsible records all storing information by completing Form (Q) Packing and Storing Market Product OR _____

Confirmation/Update Log:

Date						
Initials						

21. Transportation

Forms Required	O

RATIONALE:

Transportation vehicles that do not have properly cleaned and/or maintained food contact surfaces may be a potential source of contamination to product. Product release procedures include inspecting outgoing product for signs of contamination before loading onto vehicles.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

21.1 Transportation of Product in Harvested Product Packaging Materials

REQUIREMENT	*To minimize the potential for contamination, vehicles transporting product in harvested product packaging materials must have a clean and well-maintained cargo area.*

PROCEDURES:

❒ Before loading each vehicle, the person responsible ensures that an inspection is made of the cargo area of the vehicle to ensure it is clean and well-maintained

❒ The person responsible records information about product being transported to someone else's premises on Form (O) Transporting Product OR _____

21.2 Transportation of Product in Market Ready Packaging Materials

REQUIREMENT	*To minimize the potential for contamination, vehicles transporting product in market ready packaging materials must have a clean and well-maintained cargo area, product must be covered and must be care taken to reduce cross-contamination from products other than greenhouse product.*

PROCEDURES:

- Before loading each vehicle, the person responsible ensures that:
  - ❒ An inspection is made of the cargo area of the vehicle to ensure it is clean and well-maintained (e.g., no holes, splinters, debris, signs of pest intrusion, etc.)
  - ❒ If the product is transported to someone else's premises, the findings are recorded along with any necessary corrective actions on Form (O) Transporting Product OR _____

❒ Before loading, the person responsible inspects outgoing product for sources of contamination (e.g., glass, rodent droppings) and if contamination is observed, takes appropriate action (e.g., sorts, removes product, removes contamination, etc.)

❒ When loading, the person responsible ensures that product does not come in contact with other products/material being transported that may be a source of contamination

- During transportation, the person responsible ensures that:
  - ❒ Covered vehicles are used to transport product in market ready packaging materials, or that the integrity of the load is secured with a protective covering (e.g., tarp, plastic sheeting)
  - ❒ If the product is transported to someone else's premises, this information is recorded on Form (O) Transporting Product OR _____

❒ The person responsible records information about product being transported to someone else's premises on Form (O) Transporting Product OR _____

Confirmation/Update Log:

Date						
Initials						

22. Identification and Traceability

Forms Required	O, P, Q

RATIONALE:

Product that is identifiable and traceable is easily and quickly traced back to the point of origin. Contaminated product can be distinguished from product that is not, and product loss may be limited in the event of a recall (i.e., one identified lot versus an entire harvest).

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

22.1 Traceability System

REQUIREMENT	*A traceability system that allows all product to be traced in the event of a recall, must be in place.*

PROCEDURES:

***Note**: As much identification as is practically possible will assist in minimizing financial losses in the event a recall is necessary (i.e., being able to identify a pallet as opposed to a whole production site). For complete traceability, a Lot ID is assigned to all market product, if not directly on packaging materials, then on Form (Q) Packing and Storing Market Product. Refer to Appendix M -- Traceability and Product Identification – Some Examples.*

- The person responsible for releasing harvested product
  - ❒ Keeps track of harvested product (e.g. harvest dates or date received) through the use of pallet/bin tags or some other form of identification
  - Records row/house/zone/pallet/bin tag information for harvested product on:
    - ❒ Form (P) Harvesting and Storing Product OR _____

      AND

    - ❒ Form (O) Transporting Product OR _____

Choose ONE of the following 2 options below:

- The person responsible for putting product into market ready packaging materials:
  - ❒ Identifies all market product with a Pack ID on the primary or secondary market ready packaging materials or, if no packaging material is used, then on the pallet/skid (e.g., bunched product directly on a lined pallet) as per Section 17: Packaging Materials
  - Records Pack ID and Lot ID for market product on:
    - ❒ Form (Q) Packing and Storing Market Product OR _____

      AND

    - ❒ Form (O) Transporting Product OR _____

OR

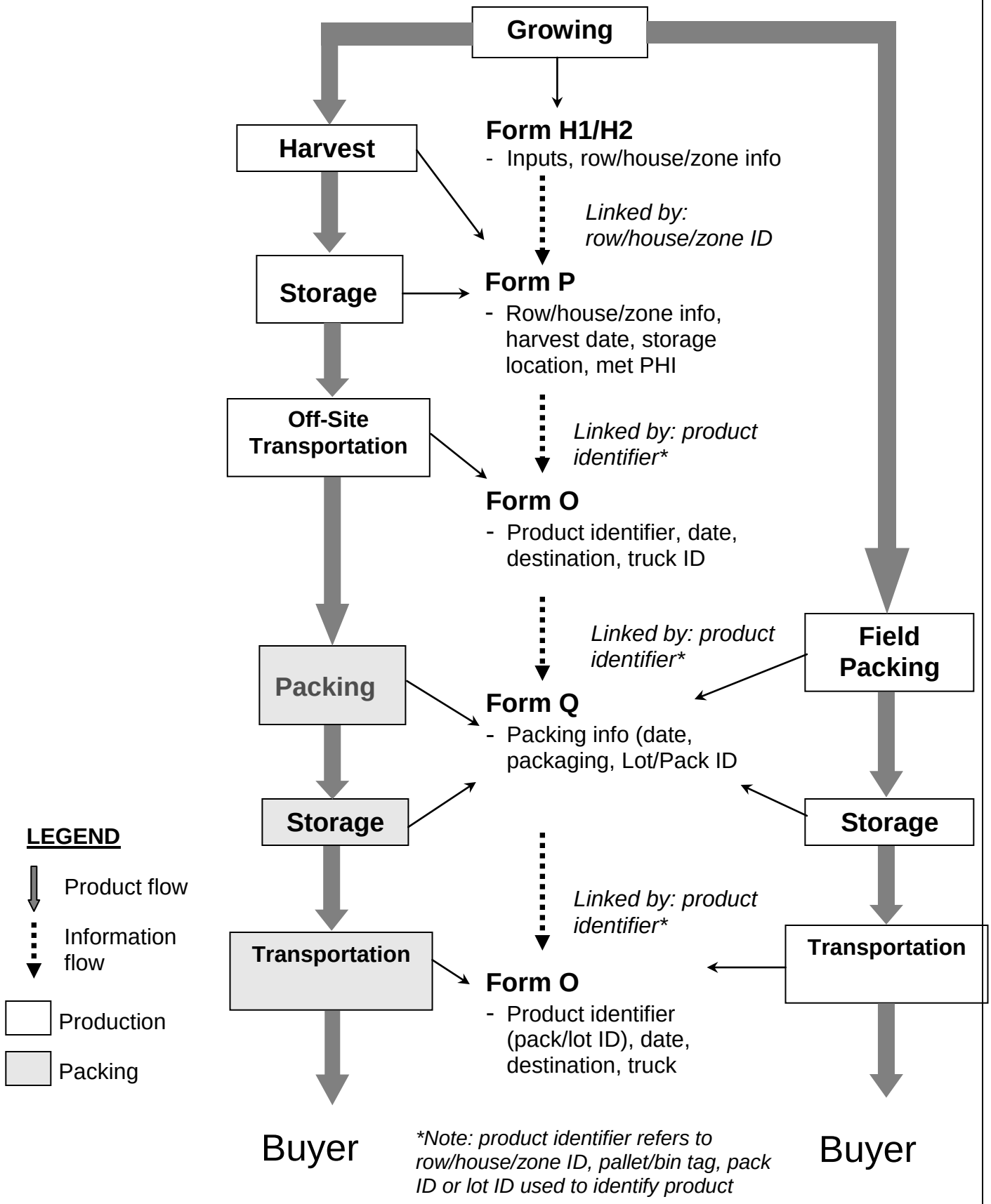
- In exceptional cases where market product is put into market ready packaging materials at one operation and delivered unlabelled directly to another operation, the person responsible for production/packing and releasing the unlabelled market product:
    - ❒ Keeps track of market product through the use of pallet/bin tags or some other form of identification
    - Records pallet/bin tag information for market product on:
        - ❒ Form (Q) Packing and Storing Market Product OR_____
        AND
        - ❒ Form (O) Transporting Product OR _____
    - ❒ Obtains written confirmation from the operation completing the labelling that market product is labelled immediately upon receipt and in accordance with labelling requirements for market product in Section 17: Packaging Materials (File under Tab: Letters of Assurance/Certificates)

The diagram below shows the basic steps in greenhouse production, packing and storage, the forms and information recorded at each step and how the records link to the product identification (such as a pack ID labelled on a box) for traceability.

Confirmation/Update Log:

Date						
Initials						

Traceability Flow Diagram



23. Deviations and Crisis Management

Forms Required	R, S, T

RATIONALE:

The key to an effective Food Safety program is identifying, rectifying and documenting major deviations in order to prevent recurrence.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

23.1 Minor Deviations and Corrective Action

REQUIREMENT	*A minor deviation must be identified and assessed. Corrective actions must be taken immediately.*

PROCEDURES:

- When an employee identifies a minor deviation, the employee:
  - ❒ Takes immediate corrective action
  - ❒ Communicates the minor deviation and corrective action to the person responsible

23.2 Major Deviations and Corrective Action

REQUIREMENT	*A major deviation must be identified, reported immediately to the person responsible and recorded. Corrective actions must be taken immediately by the person responsible and recorded.*

PROCEDURES:

Note*: See table below for major deviations and corrective actions.*

❒ When an employee identifies a major deviation, the employee immediately reports it to the person responsible

- The person responsible assesses the situation and determines:
  - ❒ The required corrective action
  - ❒ The cause of the major deviation
  - ❒ The required preventative action needed to prevent recurrence of the major deviation
  - ❒ New procedures or modifications to current procedures as required to address the identified major deviation, and trains employees on the new or modified procedures

❒ The person responsible completes Form (R) Deviations and Corrective Actions OR _____

The following are major deviations that may occur at an operation and their respective corrective actions. These represent deviations from the procedures that are identified in the manual with an exclamation mark (Level B Good Agricultural Practices). It is assumed that the deviation can be corrected on the premises and that the product has not left the operation. In certain situations, there may be other appropriate actions and guidance should be sought from qualified experts. These are not all the problems that could occur; see Section 23.3: Crisis Management for further suggestions.

Section	Major Deviations	Specific Examples	Corrective Action(s)
Section 2: Premises	The person responsible selects a packinghouse or storage area that could contaminate product or packaging material	• Debris or spills on the floor • Animals present • Broken glass or lights • Incorrect lights (not shatterproof or covered) • Leaking of fluid or liquid on to product or packaging	The person responsible: • Identifies and isolates any contaminated product, packaging material or equipment • Cleans and maintains the packinghouse and storage areas (i.e., storage for product and market ready packaging materials) • Selects another storage area if storage area cannot be cleaned (i.e. is not usable) • Replaces lighting (uses shatterproof or covered lighting) • Disposes of product and market ready packaging materials if they have come into direct contact with contamination
Section 4: Manure, Compost/ Compost Tea and Other By-Products	The person responsible receives compost/compost tea that has not been properly composted, or without knowing if it has not been properly composted	• No letter of assurance • Composting records are incomplete or missing • Composting records indicate full composting process has not been achieved	The person responsible: • Refuses, returns or disposes of compost/compost tea and reorders new compost/compost tea • Asks again for letter of assurance and does not spread the compost/compost tea until the letter is received • Continues/ restarts composting process for compost/compost tea made on-site and does not spread compost/compost until the proper process has been completed • Waits 120 days before harvesting product if compost/compost tea was spread without knowing if it was properly composted
	The person responsible spreads manure when the interval between application and harvest is less than 120 days		The person responsible: • Identifies which fields and crops are affected and does not harvest the product until the 120 days has elapsed [refer to Form (H2) Agronomic Inputs (Other)]

Section	Major Deviations	Specific Examples	Corrective Action(s)
Section 6: Agricultural Chemicals	The person responsible applies the incorrect agricultural chemical	• Agricultural chemical used is not registered for the applicable greenhouse product	The person responsible: • Stops spraying (if possible) • Identifies which house/zone/product have been sprayed with the wrong agricultural chemicals • Identifies whether product has been contaminated and if disposal of affected product is required • Obtains expert advice as required and if necessary, disposes of product • Re-trains employees on chemical application
	The person responsible receives the incorrect agricultural chemical from supplier	• Agricultural chemical is not registered for the applicable greenhouse product • Containers are damaged and/or labels are illegible	The person responsible: • Returns or refuses and reorders agricultural chemicals • Identifies whether product has been sprayed with wrong agricultural chemicals • Disposes of incorrect chemical • Re-trains employees or takes refresher course on agricultural chemical application
	The person responsible uses a storage location for agricultural chemicals that is not designated only for that purpose and/or is not covered, clean, dry and controlled access	• Leaks or spills from agricultural chemicals because they are not properly stored	The person responsible: • Moves chemicals to a proper storage facility/location or conducts maintenance on agricultural chemical storage • Cleans any spills or leaks resulting from improper storage • Identifies whether product/packaging materials has been contaminated and disposes of any affected product • Re-trains employees on storage location
	The person responsible fails to follow the label recommendations and directions when applying agricultural chemicals	• Too much or too little agricultural chemical is applied • Agricultural chemical is mixed incorrectly	The person responsible: • Stops spraying • Identifies which house/zone/product is affected • Obtains expert advice on the risk of contamination and, if necessary, disposes of product • Retrains employees or takes refresher training on applying agricultural chemicals • Identifies whether product has been contaminated and if so, disposes of affected product

Section	Major Deviations	Specific Examples	Corrective Action(s)
Section 7: Water Agricultural	The person responsible uses contaminated water to mix agricultural chemicals used for overhead spray	• Water test results show contamination • Notification from municipality • Adverse event causing contamination of source	The person responsible: • Stops spraying (if possible) • Identifies which house/zone/product is affected • Obtains expert advice on the risk of contamination and, if necessary, disposes of product • Treats water in spray tank before continuing to spray
	The person responsible does not use potable water to fill or replenish ponds for living/floating lettuce/herbs	• Water tests indicate water is contaminated	The person responsible: • Stops using water • Empties the ponds and refills them with potable water OR treats the water for potability • Disposes of product in direct contact with the contaminated water
Section 8: Equipment	The person responsible does not clean or maintain harvesting equipment regularly (e.g., annually, weekly) or properly (e.g., pressure washer, sanitizer)	• Visible debris or contamination is observed on equipment • Equipment breaks down causing chemical or physical contamination • Lubricants, oils and fuels leak on to food contact surfaces	The person responsible: • Stops activities (harvesting) • Isolates any product in contact with contaminated equipment • Cleans and maintains affected equipment • Makes necessary changes to cleaning procedure or schedule • Re-trains employees to adhere to annual/weekly cleaning and maintenance schedule • Disposes of product if it has come into direct contact with contamination.
	The person responsible does not clean or maintain packinghouse equipment regularly (e.g., daily, weekly) or properly (e.g., pressure washer, sanitizer)	• Visible debris or contamination is observed on equipment • Equipment breaks down causing chemical or physical contamination • Lubricants, oils and fuels leak on to food contact surfaces	The person responsible: • Stops activities (sorting, grading packing) • Isolates any product in contact with contaminated equipment • Cleans and maintains affected packinghouse equipment • Makes necessary changes to cleaning procedure or schedule • Re-trains employees to adhere to daily/weekly cleaning and maintenance schedule • Disposes of product if it has come into direct contact with contamination.
	The person responsible applies inaccurate rates of agricultural chemicals because he/she did not calibrate spray equipment properly or at all	• Sprayer runs out of chemical too early • Sprayer has too much chemical left over after spraying	The person responsible: • Identifies and isolates affected product • Obtains expert advice on the risk of contamination and, if necessary, does not harvest the product • Re-calibrates equipment • Re-trains employees on calibration schedule and procedures

Section	Major Deviations	Specific Examples	Corrective Action(s)
	The person responsible applies inaccurate rates of water treatment aids because he/she did not calibrate water treatment equipment properly or at all (i.e., chlorinators and ORP/ pH meters)	• Unusually high or lack of chemical (chlorine) odours • Change in rate of usage of treatment aids • Discolouration or pitting of product	The person responsible: • Stops washing/fluming activities • Calibrates equipment • Re-checks ORP/chlorine levels/pH • Treats the water and re-tests to check potability OR disposes of the water • Rinses or disposes of any product that has come into direct contact with the contaminated water • Re-trains employees on calibration schedule and procedures
	The person responsible is unsure that the temperature reading on the thermometer is accurate (i.e., that internal temperature of the tomatoes is at least 5.5°C or 10˚F colder than the water), or the person responsible knows thermometer was not calibrated	• Thermometer is not calibrated according to manufacturer's instructions	The person responsible: • Stops washing or fluming activities • Disposes of any tomatoes that have been submerged • Calibrates the thermometer • Re-trains employees on calibration schedule and procedures
Section 9: Cleaning and Maintenance Materials	The person responsible did not follow instructions for use, or used the wrong product for water treatment	• Using high concentrations • Using wrong product	The person responsible: • Stops washing/fluming activities • Rinses or disposes of any product that has come into direct contact with the contaminated water • Re-trains employees on treatment methods
	The person responsible notices equipment (e.g., gear boxes, hydraulic lines) leaking oils, lubricants onto the sorting/grading equipment (cups, belts, tables)	• Visible contamination is observed on equipment • Equipment breaks down causing chemical or physical contamination • Lubricants, oils and fuels leak on to food contact surfaces	The person responsible: • Stops activities • Isolates any product in contact with contaminated equipment • Cleans and maintains affected equipment • Makes necessary changes to cleaning procedure or schedule • Re-trains employees to adhere to daily/weekly cleaning and maintenance schedule • Disposes of product if it has come into direct contact with contamination.

Section	Major Deviations	Specific Examples	Corrective Action(s)
Section 11: Personal Hygiene Facilities	Personal hygiene facilities are not maintained and cleaned weekly (while in use) and daily (during peak season)	• Washrooms are not properly stocked (paper towels, soap, sanitizer) • Visible debris or contamination in facilities	The person responsible: • Ensures and confirms that hygiene facilities are cleaned and stocked • Instructs employees to re-wash hands • Re-trains employees on weekly/daily cleaning and maintenance schedule • Re-evaluates maintenance schedule • Determines whether any equipment or product has been contaminated • Washes equipment as necessary • Disposes of product if they have come into direct contact with contamination
Section 14: Pest Control Program for Production Sites and Buildings	The person responsible does not have an effective pest control program	Evidence of pest infestation is noticed such as: • Presence of rodents, animals or feces • Chewed boxes, walls or packaging • Nests or nesting materials	The person responsible: • Removes all feces, nesting materials rodents or animals • Washes equipment and buildings areas as necessary • Disposes of any product or packaging materials that may be contaminated • Develops and implements a pest control program, hires a third party pest control company or seeks expert advice on improving pest control program • Re-trains employees on use of chemicals • Re-evaluates and revises pest control program where necessary
	The person responsible does not follow the pest control program properly	• Bait inside buildings is not secured in a trap • Pest control products are used improperly and/or not registered for use in Canada	The person responsible: • Removes all bait that is not secured in a trap • Disposes of any product that has come in to contact with bait or other pest control products • Washes any equipment that has come into contact with pest control products or pests • Re-trains employees in pest control and monitoring procedures
Section 15: Water (for Fluming and Cleaning)	The person responsible purchases/selects a water source that is not potable	• Water test results show contamination • Notification from municipality • Adverse event causing contamination of source	The person responsible: • Stops using water • Treats the water and re-tests to check potability before using water • Rinses (with potable water) (except for tomatoes – these must be discarded) or disposes of any product that has come into contact with contaminated water

Section	Major Deviations	Specific Examples	Corrective Action(s)
	The person responsible receives water from a source that is not potable	• Water test results show contamination • Notification from municipality • Adverse event causing contamination of source	The person responsible: • Stops using water • Treats the water and re-tests to check potability before using water • Rinses (with potable water) (except for tomatoes – these must be discarded) or disposes of any product that has come into contact with contaminated water
	The person responsible stores water in an unclean cistern, tank or container or with a damaged lid/no lid	• Water test results show contamination from cistern • Adverse event causing contamination of cistern	The person responsible: • Stops using water • Empties and cleans cistern or treats water then cleans cistern when tank is empty • Re-tests to check potability before using water • Repairs or replaces lid • Rinses (with potable water) (except for tomatoes – these must be discarded) or disposes of any product that has come into contact with contaminated water • Re-trains employees on water treatment procedures
	The person responsible does not treat water properly (i.e., for potability)	• Free chlorine test strips show that free chlorine in wash or flume water is below 2 ppm • Water tests results show contamination • ORP reading is below 650 mV	• The person responsible Stops using water • Treats the water and re-tests to check potability before using water • Rinses (with potable water) (except for tomatoes – these must be discarded) or disposes of any product that has come into contact with contaminated water
	The person responsible does not use potable water to fill or replenish flumes/washers	• Water tests indicate water is contaminated	The person responsible: • Stops using water • Empties the flumes/washer, cleans and refills them with potable water OR treats the water for potability • Rinses (with potable water) (except for tomatoes – these must be discarded) or disposes of product in direct contact with the contaminated water

Section	Major Deviations	Specific Examples	Corrective Action(s)
	The person responsible does not treat flume or wash water to keep it potable when it is the last water in contact with product (fails to use a final potable water rinse)	• Product is flumed or washed with water that is not kept potable and there is no final rinse step	The person responsible: • Stops washing and identifies product that has come into contact with contaminated water • Empties the flumes/washer and cleans them • Treats the water for potability and re-tests OR implements a final potable water rinse • Rinses (with potable water) or disposes of any product in contact with contaminated water • Disposes of any products that have the potential to internalize water (e.g. tomatoes) and have been submerged in contaminated water. • Re-trains employees on water treatment procedures
	The person responsible flumes or washes product, has no treatment to keep water potable and does not have a final potable water rinse	• There is no final rinse after fluming or washing (when flume/ wash water is not kept potable)	The person responsible: • Stops washing and identifies product that has come into contact with contaminated water • Empties the flumes/washer and cleans them • Implements a final potable water rinse if possible or implements a water treatment system for flume/wash water • Rinses (with potable water) (except for tomatoes – these must be discarded) or disposes of any product in contact with contaminated water • Re-trains employees on water treatment procedures
	The person responsible submerges tomatoes in water that is not potable and is not at least 5.5°C or 10°F warmer than the internal temperature of the tomatoes (tomatoes only) (i.e., internal core temperature of the tomatoes is not at least 5.5°C or 10°F colder than the water)	• Hot tomatoes from the greenhouse are flumed in cold water where potability is not maintained	The person responsible: • Stops washing or fluming activities • Empties the flumes/washer and cleans them • Disposes of any tomatoes that have been submerged in contaminated water • In future, cools the tomatoes or warms water so that the water is at least 5.5°C or 10°F warmer than the internal temperature of the tomatoes OR treats water and re-tests to check potability

Section	Major Deviations	Specific Examples	Corrective Action(s)
Section 17: Packaging Materials	The person responsible fails to clean reusable (non-porous) packaging materials properly before use	• Reusable packaging materials have dirt or debris	The person responsible: • Stops packing • Cleans reusable packaging according to SSOP • Disposes of or rewashes any product in contact with contaminated packaging • Re-trains employees on cleaning procedures for reusable packaging
	The person responsible fails to check market ready packaging materials before use	• Packaging materials are damaged or dirty • The wrong packaging materials are reused e.g., porous packaging materials are reused without a new liner; packaging materials marked as not for reuse are used	The person responsible: • Stops packing • Checks packed product for dirty or damaged packaging • Disposes or rewashes any product in contact with contaminated packaging • Disposes of any damaged and unusable packaging • Washes any reusable packaging • Re-trains employees on procedures for inspecting and using market ready packaging
Section 18: Growing and Harvesting	The person responsible harvests product without allowing the proper interval (of more than 120 days) to elapse between the application of manure and harvest		The person responsible: • Identifies which house/zone/product are affected • Disposes of product
	The person responsible harvests product without allowing the pre-harvest interval to elapse for the application of agricultural chemicals		The person responsible: • Identifies which house/zone/product are affected • Disposes of product
Section 19: Sorting, Grading, Packing and Storing	The person responsible receives the harvested/market product from an operation not following a food safety program or without a letter of assurance		The person responsible: • Refuses the product and reorders the product; or asks for letter of assurance and does not pack or sell the product until it is received.

Section	Major Deviations	Specific Examples	Corrective Action(s)
Section 20: Storage of Product	The person responsible selects a storage area that could contaminate product or packaging material	• Garbage, spills or other contaminants in the storage • Lighting not covered or shatterproof • Broken glass or lights in the storage •	The person responsible: • Isolates any contaminated product or packaging • Cleans and maintains the storage area (i.e., storage for product and market ready packaging materials) • Replaces broken lights with shatterproof or covered lighting • Selects another storage area if storage area cannot be cleaned (i.e., is not usable) • Disposes of product and market ready packaging materials that have come into direct contact with contamination

23.3 Crisis Management

REQUIREMENT	*A crisis management plan must be established in the event that product needs to be recalled.*

PROCEDURES:

Note*: Recall procedures and forms are included in Appendix S -- Recall Program.*

❒ Annually – The person responsible reviews *Appendix S -- Recall Program* OR _____ _____and updates recall team name(s) and contact information if necessary

❒ The person responsible keeps up-to-date contact information for all suppliers and customers

❒ Annually – The person responsible conducts a mock recall to test the effectiveness of the traceability system by completing the forms in *Appendix S: Recall Program* OR _____ _____ (File completed forms under Tab: Recall Program)

Note: *Refer to Appendix R: How to Conduct A Mock Recall – An Example*

- If an abnormal event occurs that causes contamination of product, the person responsible follows the following basic steps to manage the risk of contamination of product:
  - ❒ Stops current activity (if applicable) (e.g., shuts down packing line) to prevent further contamination
  - ❒ Identifies and, if possible, isolates the product and equipment affected
  - ❒ Notifies authorities/person responsible
  - ❒ Determines whether product has been contaminated
  - ❒ Determines and conducts appropriate course of action (e.g., disposes of product, cleans equipment)
  - ❒ Approves the release of unaffected product
  - ❒ Identify cause of problem and undertakes preventive measures (e.g., preventive maintenance, training of employees)
  - ❒ Records this information on Form (R) Deviations and Corrective Actions OR _____ _____

Note: *This basic procedure can be used in the case of most adverse events such as blood on product, flooding event, hydraulic line breaks and fluid leaks on to product.*

Example 1: Employee cuts hand during packing and product is contaminated with blood. The person responsible or employee:

- Stops packing line
- Holds product on the line
- Sends injured employee for immediate medical attention
- Disposes of product in the vicinity
- Notifies person responsible (if applicable)
- Identifies which product and equipment is contaminated and isolates contaminated product to prevent further contamination
- Disposes of all contaminated product and cleans and disinfects all affected equipment
- Approves the release of unaffected product
- Re-trains all employees on workplace safety practices and policies
- Performs required maintenance of equipment if faulty equipment caused injury
- Records information on Form (R) Deviations and Corrective Actions

❒ In the event that the product has left the premises, food safety has been compromised and the public is at risk, the person responsible initiates the Recall process

23.4 Complaint Handling

REQUIREMENT	*A complaint handling system must be established to manage complaint data and control and correct shortcomings in food safety.*

PROCEDURES:

❒ The person responsible has a system in place to receive, document and take action in response to complaints (e.g. from customers, consumers etc.)

❒ The person responsible records complaints received on Form (R) Deviations and Corrective Actions OR _____

❒ The person responsible includes a review of all complaints during the annual review of the Food Safety Program (See Section 24: CanadaGAP Food Safety Manual Review)

23.5 Food Defense

REQUIREMENT	*Food defense risks must be addressed and a system to reduce or eliminate identified risks must be in place. Potential threats to food security in all phases of the operation must be identified and assessed.*

PROCEDURES:

❒ Responsibility for food defense/security is assigned to a knowledgeable person(s) [record name(s) here: _____]

- The person responsible ensures that:
  - ❒ All commodity starter products/harvested products/other inputs are from safe and secured sources
  - ❒ All product handling and storage areas are safe and secured
  - ❒ All market product is safe and secured
  - ❒ All transportation is safe and secured

***Note**: Refer to the appropriate sections for input/product/transportation requirements. Refer to Section 13: Visitor Policy for more information on controlled access areas. Refer to Form (A) Buildings Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist to ensure all areas have been considered.*

❒ The person responsible assesses potential food defense/security risk factors by completing Form (T) Food Defense OR _____

_____

***Note**: Refer to the chart provided in Appendix T: Food Defense: Assessment of Possible Risks and List of Security Measures to help with your assessment.*

❒ The person responsible has information on all employees and visitors that can be found within the following records (e.g., employee records, Form L, etc.): _____

_____

- In case of an intentional threat/incident, the person responsible has procedures for corrective actions in place which include:
  - ❒ Investigating threats (e.g., signs of tampering, malicious, criminal or terrorist actions, etc.)
  - ❒ Alerting the appropriate people (e.g., law enforcement, public health authorities, customers, consumers, etc.)
  - ❒ Recalling product (if necessary)
  - ❒ Evaluating security measures to reduce the risk of reoccurrence

❒ The person responsible reviews all threats/security measures during the annual review of the Food Safety Program (See Section 24: CanadaGAP Food Safety Manual Review)

23.6 Allergens

REQUIREMENT	*An allergen program is in place to ensure that cross contamination does not occur and that product is not a source of contamination.*

PROCEDURES:

❒ The person responsible has procedures in place to avoid cross contamination of product with allergens not present in the product (e.g., from production site, packing line, vehicle, storage, etc.)

❒ The person responsible labels product (e.g., on packaging materials) with allergen information (if applicable)

❒ The person responsible performs an annual review of the allergen program

❒ Annually – The person responsible assesses potential risks from allergens and records the information Form (S) Allergen Information - Assessment OR _____

_____

Confirmation/Update Log:

Date						
Initials						

Forms Required	N/A

24. CanadaGAP Food Safety Manual Review

RATIONALE:

An annual review allows the person responsible and senior management of the company to ensure that the CanadaGAP Food Safety Manual is being followed effectively. A review determines if any problems were encountered during the growing/harvesting/storing/packing season. The result of a review is a more effective and efficient Food Safety program.

IMPORTANT NOTE	**It is assumed throughout the manual that EACH of the requirements (along with their procedures) are to be considered in terms of food safety. The risks are from those hazards that are in "direct contact with product" OR that may have an "impact on food safety through cross contamination".**

24.1 Protocols

REQUIREMENT	*A protocol must be in place to review the CanadaGAP Food Safety Manual annually to ensure complete and effective implementation. Senior management must demonstrate its commitment to the continuing suitability, adequacy and effectiveness of the company's food safety system, including related policies and procedures.*

PROCEDURES:

❒ The person responsible ensures that the most current updated pages issued by CanadaGAP are used when reviewing the CanadaGAP Food Safety Manual for Greenhouse Product

Note*: Revisions are available on the CanadaGAP web site (www.canadagap.ca).*

❒ The person responsible annually reviews the CanadaGAP Food Safety Manual for Greenhouse Product by completing and updating the applicable sections and forms of the Manual

❒ The person responsible annually reviews the major deviations and complaints and makes any necessary changes to food safety policies and procedures

❒ Annually - The person responsible conducts an internal audit of the entire operation by completing the CanadaGAP Self-Assessment Checklist or Audit Checklist (File under Tab: _____), or by using an outside party to perform a pre-audit (Download a checklists at www.canadagap.ca)

❒ The person responsible records that the CanadaGAP Manual has been annually reviewed by initialling the Confirmation/Update Log at the end of each section and below

Confirmation/Update Log:

Date						
Initials						

COMPENDIUM OF FOOD SAFETY FORMS

INDEX

Form	Title	CanadaGAP Issue Date and Version Number	Form Location *
ANNUAL FORMS			
A.	Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
B.	Storage Assessment	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
C.	Employee Personal Hygiene and Food Handling Practices Policy – Production Site	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
D.	Employee Personal Hygiene and Food Handling Practices Policy – Packinghouse/Product Storage	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
E.	Pest Control for Production Sites and Buildings	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
F.	Water (for Fluming and Cleaning) Assessment	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
S.	Allergen Information - Assessment	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
T.	Food Defense	2013 Version 6.1	FOOD SAFETY MANUAL (Tab: FORMS)
ONGOING FORMS			
G.	Cleaning, Maintenance and Repair of Production Sites and Buildings	2013 Version 6.1	
H1.	Agronomic Inputs (Agricultural Chemicals)	2013 Version 6.1	
H2.	Agronomic Inputs (Other)	2013 Version 6.1	
I.	Equipment Cleaning, Maintenance and Calibration	2013 Version 6.1	
J.	Cleaning and Maintenance – Personal Hygiene Facilities	2013 Version 6.1	
K.	Training Session	2013 Version 6.1	
L.	Visitor Sign-In Log	2013 Version 6.1	
M.	Pest Monitoring for Production Sites and Buildings	2013 Version 6.1	
N1.	Water Treatment Control and Monitoring	2013 Version 6.1	
N2.	Water Temperature Control and Monitoring	2013 Version 6.1	
O.	Transporting Product	2013 Version 6.1	
P.	Harvesting and Storing Product	2013 Version 6.1	
Q.	Packing and Storing Market Product	2013 Version 6.1	
R.	Deviations and Corrective Actions	2013 Version 6.1	

**Refers to where you place/keep/store your Forms (e.g., office, washroom door, entrance to packinghouse)*

A. Building Sketch (Interior Floor Plan) and Agricultural Chemical Storage Checklist

ANNUAL

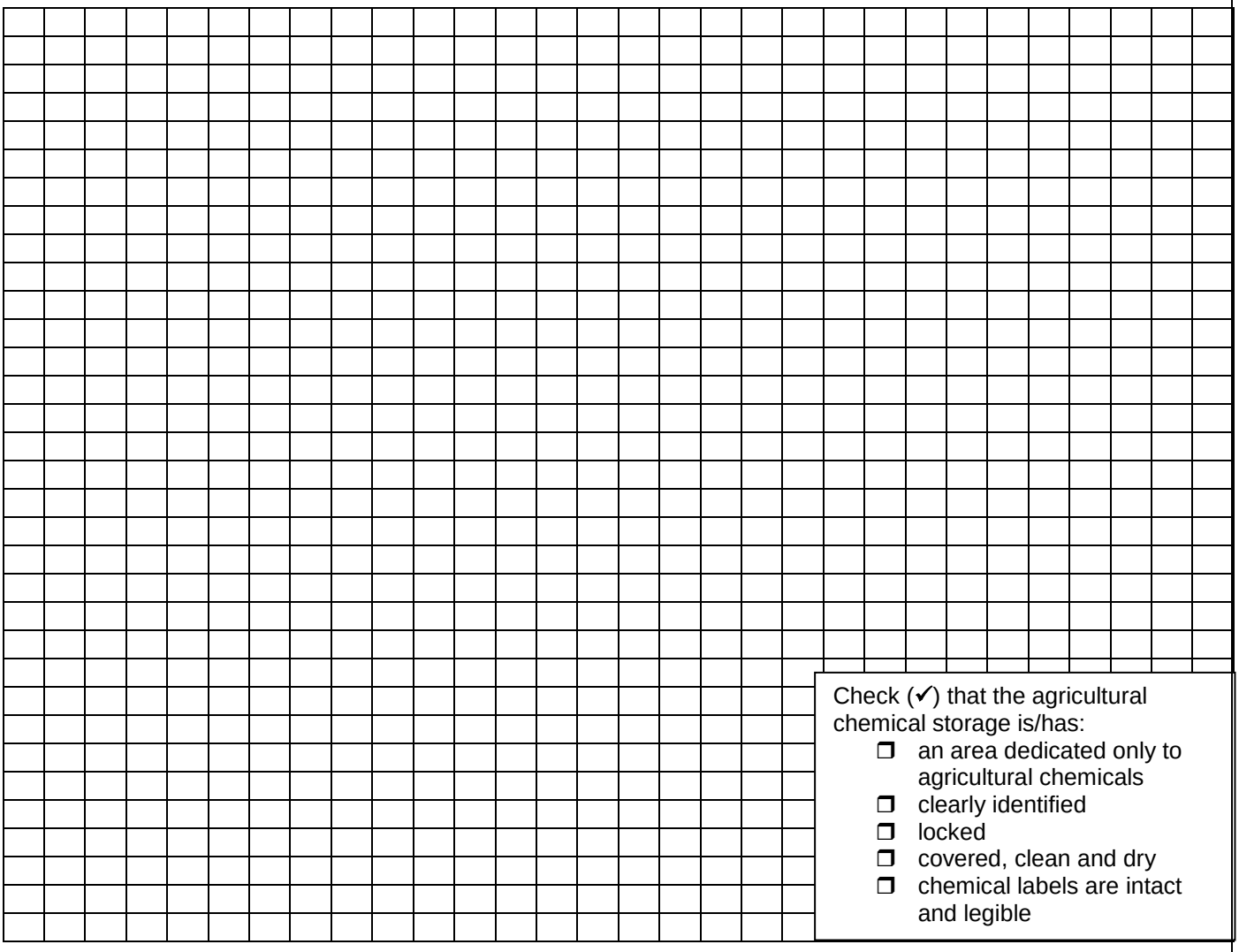
Instructions: *Draw the interior floor plan of your buildings and production sites. As applicable, indicate the location of packing line(s), washroom(s), hand washing station(s), hand sanitizers/wipes, harvested and market products, market ready packaging materials, oil/fuel storage tank, water storage tank/container/cistern, interior and exterior pest control devices [e.g., traps (each must be numbered), bait stations, etc.], pest control product storage, agricultural chemical storage (if located inside buildings). Also check (✓) that the agricultural chemical storage meets the requirements in the box below. Make additional copies as necessary and complete as Page _ of _ to indicate more than one page if required.*

If applicable, indicate in the following checkbox (✓) that your:

❒ Agricultural chemical storage is separate from the buildings diagrammed below.
- A diagram of standalone agricultural chemical storages is not required.
- The agricultural chemical storage checklist, below, does not need to be completed.

Completed by: _____ ***Date:*** _____ ***Page*** _____ ***of*** _____

Production Site/Building ID #/Name: _____



Check (✓) that the agricultural chemical storage is/has:
- ❒ an area dedicated only to agricultural chemicals
- ❒ clearly identified
- ❒ locked
- ❒ covered, clean and dry
- ❒ chemical labels are intact and legible

Confirmation/Update Log:

Date						
Initials						

B. Storage Assessment

Instructions: *This Form must be completed prior to using storages for the first time in a season (use one Form per storage for harvested and market product). If an item is not applicable, indicate N/A. Make additional copies as necessary and complete as Page _ of _ to indicate more than one page if required.*

Completed by: _____ ***Date:*** _____ ***Page*** _____ ***of*** _____

Storage ID: _____

Requirement	Yes (✓)	No (✓)	Action Taken if Answered "No"
Storage is secured (e.g., with a lock) when unsupervised?			
Lights in the storage area are shatterproof or covered?			
Product is stored away from leaky areas (e.g., from roofs, pipes, condensation)?			
When the storage is in use, production site equipment, oil/fuel, agricultural chemicals and fertilizers are stored and repaired elsewhere?			
When the storage is in use, oil/fuel storage tanks are stored elsewhere or contained to prevent contamination of product?			
Floor of the storage is clean and free from contaminants (e.g., oil, wood, plastic, glass, metal, garbage, chemicals)?			
Walls/ceilings of storage are clean and in good condition (e.g., free from contamination from oil, wood, plastic, glass, metal, garbage, chemicals)?			
The storage is a no-smoking zone?			
Storage is free from animals (wild or domestic) or evidence of animals (droppings) and other pests (birds, insects, rodents)?			
Other (specify):			

How and when was the storage cleaned? *(describe)*: _____

_____

_____

Confirmation/Update Log:

Date						
Initials						

C. Employee Personal Hygiene and Food Handling Practices Policy – Production Site

ANNUAL

Instructions: *This Form is intended to assist you in setting your policy, to itemize the policy components and to be used as a training tool and possible handout to employees. All items need to be addressed during the training session for employees. Write N/A beside those not applicable to your operation.*

Completed by: _____ ***Date:*** _____

Employee Illness, Disease, and Injury

- ❒ Persons able to transmit, or suffering from, a contagious disease and/or illness transferable to food (e.g., Hepatitis A, Salmonella, *E. coli* O157:H7) and those with a temporary illness (e.g., bad cold, diarrhea and vomiting) are advised to see a doctor
- ❒ Employees are trained on the role and responsibility they play in preventing the contamination of product
- ❒ Open wounds are treated and covered with a waterproof covering (e.g., rubber gloves)

Employee Biosecurity

- ❒ Employees are aware of their surroundings and the people they come in contact with, in and around the production site
- ❒ Employees inform person responsible (name of person responsible: _____), of unknown visitors
- ❒ Employees are trained in precautions they need to take when moving between production areas (e.g., from livestock areas/field to storage/packinghouse)

Employee Glove and Apron Use

- ❍ Gloves are used
- ❍ Aprons are used

If gloves and aprons are not used, proceed to the next sub-section

- ❒ Gloves are made of rubber, nitrile, polyethylene, polyvinyl chloride, polyurethane or cloth
- ❒ Hands are washed and dried, before gloves are put on and after they are removed
- ❒ Aprons are made of rubber
- ❒ Employees wear aprons when they hold product against their upper body (e.g., to trim product)
- ❒ Gloves and aprons are replaced when ripped or worn out
- ❒ Reusable aprons are washed daily
- ❒ Gloves are removed when leaving the work area and replaced upon return. If reusable, gloves are washed (using proper hand washing technique) after being put back on or laundered daily (for cloth)

Employee Hand Washing

- ❒ Hands are washed and dried:
  - Before beginning work each day
  - Before entering the production site
  - Before putting on gloves (if used)
  - After every visit to the washroom
  - After a break or meal
  - After smoking
  - After hand-to-face contact (e.g., coughing, sneezing, blowing nose)
  - After applying sunscreen and insect repellent
  - After handling any materials other than the product (e.g., fuelling equipment, spraying)
- ❒ Hands and reusable gloves (except for cloth) are washed using proper hand washing techniques:
  - Wet hands, lather soap for approximately 20 seconds
  - Scrub well (especially fingernails and knuckles) Use fingernail brushes if needed/required
  - Rinse
  - Dry hands and wrists with paper towel
- ❒ If no water is available, hand wipes and hand sanitizer are used
- ❒ Hand wipe and hand sanitizer use:
  - Use hand wipes to facilitate soil/organic matter/juice etc. removal AND
  - Use one squirt of waterless, antibacterial, alcohol-based product
- ❒ Gloves are not worn as a substitute for hand washing

Production Practices

- ❒ Employees are trained to visually inspect product during harvest to look for evidence of unusual animal or bird activity (i.e., excrement) and discards product if it has been contaminated
- ❒ Employees are trained to harvest into clean containers

Other

- ❒ Employees know the difference between and how to handle major and minor food safety deviations
- ❒ Employees adhere to the following:
  - Always use toilet facilities
  - Always dispose of toilet paper in toilet (i.e., not in garbage can)
  - Never spit
  - Eat food, drinks, gum, candy or use tobacco products (including chewing tobacco and snuff) only in areas designated for this purpose (e.g., outside, in lunchroom)
  - Put personal effects in designated areas (e.g., lunches, clothing, shoes, smoking materials)
  - Dispose of waste in designated containers

Confirmation/Update Log:

Date						
Initials						

D. Employee Personal Hygiene and Food Handling Practices Policy – Packinghouse/Product Storage

Instructions: *This Form is intended to assist you in setting out your policy, to itemize the policy components and to be used as a training tool and possible handout to employees. All items need to be addressed during the training session for employees. Write N/A beside those not applicable to your operation.*

Completed by: _____ ***Date:*** _____

Employee Illness, Disease and Injury

- ❒ Persons able to transmit or suffering from a contagious disease and/or illness transferable to food (e.g., Hepatitis A, Salmonella, *E. coli* O157:H7) and those with a temporary illness (e.g., bad cold, diarrhea and vomiting) are advised to see a doctor
- ❒ Employees are trained on the role and responsibility they play in preventing the contamination of product
- ❒ Open wounds are treated and covered with a waterproof covering (e.g., rubber gloves)

Employee Biosecurity

- ❒ Employees are aware of their surroundings and the people they come in contact with, in and around the packinghouse/product storage
- ❒ Employees inform person responsible (name of person responsible: _____ ____) of unknown visitors
- ❒ Employees are trained in precautions they need to take when moving between production areas (e.g., from livestock areas/field to storage/packinghouse)

Production Practices

- ❒ Employees adhere to the following:
  - Only authorized employees handle market product
  - Only authorized employees may enter controlled-access areas

Employee Jewellery and Other Personal Effects

- ❒ Bracelets, necklaces and other jewellery (except for rings) are not worn
- ❒ Rings are covered with gloves
- ❒ False fingernails, false eyelashes or other such effects are not worn
- ❒ Items are removed from shirt pockets (e.g., pens, etc.)
- ❒ Loose buttons on shirts/jackets are fixed

Employee Glove and Apron Use

❍ Gloves are used ❍ Aprons are used

If gloves and aprons are not used, proceed to the next sub-section

- ❒ Gloves are made of rubber, nitrile, polyethylene, polyvinyl chloride or polyurethane
- ❒ Hands are washed and dried, before gloves are put on and after they are removed
- ❒ Aprons are made of rubber
- ❒ Employees wear aprons when they hold product against their upper body (e.g., to trim product)
- ❒ Gloves and aprons are replaced when ripped or worn out
- ❒ Reusable aprons are washed daily
- ❒ Gloves are removed when leaving the work area and replaced upon return. If reusable, gloves are washed (using proper hand washing technique) after being put back on

Employee Hand Washing

- ❒ Hands are washed and dried:
  - Before beginning work each day
  - Before putting on gloves (if used)
  - After every visit to the washroom
  - After a break or meal
  - After smoking
  - After hand-to-face contact (e.g., coughing, sneezing, blowing nose)
  - After applying insect repellent
  - After handling any materials other than the product (e.g., garbage, cleaning and maintenance materials)
- ❒ Hands and reusable gloves (except for cloth) are washed using proper hand washing techniques
  - Wet hands, lather soap for approximately 20 seconds
  - Scrub well (especially fingernails and knuckles) Use fingernail brushes if needed/required
  - Rinse
  - Dry hands and wrists with paper towel
- ❒ If no water is available, hand wipes and hand sanitizer are used
- ❒ Hand wipe and hand sanitizer use:
  - Use hand wipes to facilitate soil/organic matter/juice etc. removal AND
  - Use one squirt of waterless, antibacterial, alcohol-based product
- ❒ Gloves are not worn as a substitute for hand washing

Employee Cleanliness, Footwear and Hair

- ❒ A degree of personal cleanliness is maintained which includes starting each day wearing clean clothing and (specify other): _____
- ❒ Clean footwear is always worn (no dirt or other foreign matter)
- ❒ Long hair touching the shoulders is restrained (e.g., hat, hairnet, tied)

Other

- ❒ Employees know the difference between and how to handle major and minor food safety deviations
- ❒ Employees adhere to the following:
  - Always use toilet facilities
  - Always dispose of toilet paper in toilet (i.e., not in garbage can)
  - Never spit
  - Eat food, drinks, gum, candy or use tobacco products (including chewing tobacco and snuff) only in areas designated for this purpose (e.g., outside, in lunchroom)
  - Put personal effects in designated areas (e.g., lunches, clothing, shoes, smoking materials)
  - Dispose of waste in designated containers

Confirmation/Update Log:

Date						
Initials						

E. Pest Control for Production Sites and Buildings

***Instructions**: For each type of pest being controlled, specify the pest control method used. This Form is to be completed annually. Make additional copies as necessary and complete as Page __ of __ to indicate more than one page if required.*

Completed by: _____ ***Date:*** _____ ***Page*** _____ ***of*** _____

Production Site/Building ID #/Name: _____

<table>
<tr><th>Pest</th><th>Control Method
and Description</th><th>Person
Responsible</th></tr>
<tr><td rowspan="2">Birds</td><td>Around production site/building exterior
❒ Deterrent or other devices (specify) _____</td><td></td></tr>
<tr><td>Inside production site/building
❒ Deterrent or other devices (specify) _____</td><td></td></tr>
<tr><td rowspan="2">Rodents</td><td>Around production site/building exterior (perimeter)
❒ Bait (specify type) _____
❒ Traps (specify type) _____
❒ Chemicals (specify below)
<table><tr><td>Name of chemical</td><td>PCP #</td><td>Concentration</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>❒ Other (specify) _____</td><td></td></tr>
<tr><td>Inside production site/building
❒ Traps (specify type) _____
❒ Other (specify) _____</td><td></td></tr>
<tr><td rowspan="2">Insects</td><td>Around production site/building exterior
❒ Bait (specify type) _____
❒ Traps (e.g., glue boards, sticky traps) _____
❒ Chemicals (specify below)
<table><tr><td>Name of chemical</td><td>PCP #</td><td>Concentration</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>❒ Other (specify) _____</td><td></td></tr>
<tr><td>Inside production site/building
❒ Traps (e.g., glue boards, sticky traps) _____
❒ Chemicals (specify below)
<table><tr><td>Name of chemical</td><td>PCP #</td><td>Concentration</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>❒ Other (specify) _____</td><td></td></tr>
<tr><td>Other
(specify)</td><td>_____
_____
_____</td><td></td></tr>
</table>

Confirmation/Update Log:

Date						
Initials						

F. Water (for Fluming and Cleaning) Assessment

ANNUAL

***Instructions**: Complete and/or update annually for all water sources. Check off (✓) those items that apply. Make additional copies as necessary and complete Page __ of __ to indicate more than one page if required.*

Completed by: _____ ***Date:*** _____ ***Page*** _____ **of** _____

Water source (e.g., municipal, well, surface)	**Re-cycled (✓)?**	**Stored (✓)?**	**Use**	**Method**	**Items to Assess (check each item)**	**Date of water tests**		**Corrective Actions** (*see examples below)	**Cleaning and Treatment****
			❑ Fluming ❑ Washing ❑ Final rinse ❑ Hand washing ❑ Cleaning equipment/ containers/ building	❑ Pit ❑ Spray ❑ Hose ❑ Tap ❑ Dump tank ❑ Pressure wash ❑ Other: _____ _____	❑ Animal access ❑ Runoff ❑ Working condition of well/pipes ❑ Other possible hazards assessed (describe):				❑ Cleaned ❑ Treated ❑ Cistern ❑ Well ❑ Other: Using Appendix: ❑ A ❑ B ❑ H ❑ OR: _____
			❑ Fluming ❑ Washing ❑ Final rinse ❑ Hand washing ❑ Cleaning equipment/ containers/ building	❑ Pit ❑ Spray ❑ Hose ❑ Tap ❑ Dump tank ❑ Pressure wash ❑ Other: _____ _____	❑ Animal access ❑ Runoff ❑ Working condition of well/pipes ❑ Other possible hazards assessed (describe):				❑ Cleaned ❑ Treated ❑ Cistern ❑ Well ❑ Other: Using Appendix: ❑ A ❑ B ❑ H ❑ OR: _____
			❑ Fluming ❑ Washing ❑ Final rinse ❑ Hand washing ❑ Cleaning equipment/ containers/ building	❑ Pit ❑ Spray ❑ Hose ❑ Tap ❑ Dump tank ❑ Pressure wash ❑ Other: _____ _____	❑ Animal access ❑ Runoff ❑ Working condition of well/pipes ❑ Other possible hazards assessed (describe):				❑ Cleaned ❑ Treated ❑ Cistern ❑ Well ❑ Other: Using Appendix: ❑ A ❑ B ❑ H ❑ OR: _____

Assessment Guide: Assessment should include runoff from agricultural chemicals, fuels or manure; contamination in pipes, cleanliness of cistern etc.

***Corrective Actions**:
-Consult with experts
-Install filtration
-Use alternate source
-Install devices to prevent backflow
-Construct barriers (e.g., fences, ditches)
-Maintenance of well or cistern
-Level ground to prevent runoff
-Test water for Total Coliforms and *E. coli* using an accredited lab conforming to ISO 17025 or equivalent

Appendix A: Shock Chlorination of Well Water – An Example
Appendix B: Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example
Appendix H: Cleaning and Treating Cisterns – An Example

****Cleaning & Treatment:** ✓ to indicate cleaning &/or treatment, what was cleaned/treated, which instructions were followed or what treatment method used (e.g., UV)

Confirmation/Update Log:

Date						
Initials						

G. Cleaning, Maintenance and Repair of Production Sites and Buildings

Instructions: *An inspection of both the interior and exterior of your production site and buildings (e.g., packinghouse, storages) (except agricultural chemical storage buildings) must be conducted monthly (when in use) and the following checklist completed. Place N/A if certain structures are not applicable to your operation.*

Completed by: _____ ***Date:*** _____

Production Site/Building ID #/Name: _____

Interior of ❒ Production Site ❒ Building	**Exterior of ❒ Production Site ❒ Building**
❒ No holes/crevices/leaks in the production site/building (e.g., walls, windows, screens) ❒ Lights are shatterproof and adequate (only for buildings) ❒ No pipes or condensation leaking ❒ Floor drainage is good (floor sloped, drain covers clear) ❒ Floors, walls and ceilings are clean and free from garbage, spills, rodent droppings, etc. ❒ Floor is free of crevices that could harbour pests or debris ❒ Fans are dust-free and clean ❒ Animals (wild or domestic), pests (insects, rodents, etc.) and bird nests are not present ❒ All materials are in designated areas (e.g., packaging materials and product)	❒ No holes/crevices/leaks in the production site/building (e.g., walls, windows, screens) ❒ All windows (ONLY in buildings) can be closed OR have close-fitting screens that are in good condition ❒ There are no broken panes of glass ❒ 1/2 meter wide perimeter strip of stone or crushed gravel OR short grass around production site/building ❒ No junk piled within 3 m of production site/building (e.g., old or unused machinery, garbage) ❒ Weeds are controlled ❒ Land drainage around production site/building is good ❒ Dumpsters are emptied as needed to prevent pest infestation, and surroundings are free of debris ❒ All doors are close-fitting ❒ Doors that can be secured (i.e., to lock storages when unsupervised)
Maintenance required If any of the above have NOT been checked off **(✓)**, please describe the maintenance required: _____ _____ (Use the reverse of this Form if more space is needed) Date and Name of Person work was completed by: _____ Date and Signature of Person overseeing the work: _____	**Maintenance required** If any of the above have NOT been checked off **(✓)**, please describe the maintenance required: _____ _____ (Use the reverse of this Form if more space is needed) Date and Name of Person work was completed by: _____ Date and Signature of Person overseeing the work: _____

Confirmation Signature: _____ ***Date:*** _____

ONGOING

H1. Agronomic Inputs (Agricultural Chemicals)

Instructions: *Includes all applications from pre-planting through to, and including, harvest. One Form must be completed for* ***EACH PRODUCTION SITE.***

Operation Name:	**Current Crop:**	**Variety:**
Production Site Information (e.g., Row/House/Zone #)**:**	**Production Site Area** (e.g., # of acres/hectares per Row/House/Zone #)**:**	**Date Planted:**

Application Date	**Product/Trade Name**	**PCP #**	**Actual Quantity Used** (e.g., 22.28 kg)	**Rate Applied Per Unit Area**	**Label Instructions Followed (✓)**	**Area Treated**	**Method of Application** (e.g., foliar, drench)	**Earliest Allowable Harvest Date (EAHD)**	**PHI**	**Signature of Applicator**

Confirmation Signature: _____ ***Date:*** _____

H2. Agronomic Inputs (Other)

ONGOING

Instructions: *Includes all applications from pre-planting through to, and including, harvest. One Form must be completed for* ***EACH PRODUCTION SITE.***

Operation Name:	**Current Crop:**	**Variety:**
Production Site Information (e.g., Row/House/Zone #)**:**	**Production Site Area** (e.g., # of acres/hectares per Row/House/Zone #)**:**	**Date Planted:**

MANURE*/COMPOST/COMPOST TEA/OTHER BY-PRODUCTS†

Date	What is Applied	Type*†	Supplier's Name	Rate	Earliest Allowable Harvest Date (according to appropriate time delay)	Applicator's Name

***Manure (cattle, hog, poultry, horse, etc.)**
†Other by-product (seafood waste, vegetable culls, etc.)

Confirmation Signature: _____ ***Date:*** _____

I. Equipment Cleaning, Maintenance and Calibration

Use this Form to record production site AND building equipment cleaning, maintenance AND calibration.

Instructions: *An inspection of your equipment (e.g., cutting blades, brushes, packing lines, conveyors, belts chlorinator, sprayer, thermometers) must be conducted at least weekly (when in use). Check for leaks, broken, loose, corroded or damaged parts, soil, mud, build-up, etc. and any cleaning, maintenance and calibration needed. Hand-held cutting and trimming* tools that come into direct contact with product must *be inspected and cleaned daily. Record required activities below and give a brief description of why and how you are performing the activity.*

Date	Employee Completing Job	Equipment Activity Performed On	Activity Code*	Brief Description of Activity

Activity Codes: **1 – Calibration 2- Maintenance 3 – Repair 4 – Cleaning 5 –Inspection 6 - Other** ***(specify)***

Confirmation Signature: _____ ***Date:*** _____

J. Cleaning and Maintenance – Personal Hygiene Facilities

Instructions: *Record cleaning and maintenance of both exterior and interior washrooms and hand washing facilities. Complete at least weekly (while in use) and daily during peak season for each facility.* ***Write N/A in column if not applicable to facility.*** *Cleaning includes toilet, sink, floor, paper towel dispenser, all handles (e.g., toilet handle, door knob, tap), etc.*

Type of Facility and Location: _____

Date and Time	Assessment of Facilities (e.g., do toilets need emptying, are extra supplies needed, etc.) Check (✓) if assessment OK or after corrective action(s) taken (e.g., pumped toilets, stocked extra toilet paper, etc.)	Items to Inspect For (✓)						Employee Responsible for Cleaning (Sign to confirm all cleaning completed) OR Person Confirming Cleaning Completed by a Company
		Disposa-ble Paper Towels	Soap	Water Source Operating (Hot and/or Cold Water)	Toilet Paper	Hand Sanitizer/ Wipes	Garbage Emptied	

Confirmation Signature: _____ ***Date:*** _____

K. Training Session

ONGOING

Instructions: *Document when the Employee Personal Hygiene and Food Handling Practices Policy (Forms C Employee Personal Hygiene and Food Handling Practices Policy – Production Site and D Employee Personal Hygiene and Food Handling Practices Policy - Packinghouse) and minor and major deviations training session is held for all employees handling product/packaging materials/food contact surfaces. In cases where employee names and signatures are not recorded, indicate in the final column where further records are available (e.g., payroll records, contractor records) to track training of employees.*

Date	Number of Employees Trained or Employee Name	Topic Covered [Form C or D, minor and major deviations, or other *(describe)*]	Person Responsible for Training	Casual Employee (C), Contract Employee (CE), Payroll Record (P) or Employee Signature

Confirmation Signature: _____ ***Date:*** _____

L. Visitor Sign-In Log

Instructions: *All visitors must sign in prior to entering controlled-access areas (production sites and within buildings).*

VISITOR POLICY

All visitors must*:*

- ❒ Remain in the area they are given permission to be in (e.g., contractor remains in work area only)
- ❒ Wash hands before entering controlled-access areas
- ❒ Not handle product or materials unless given permission
- ❒ Wear appropriate protective and/or food safety-related clothing
  This includes: _____
- ❒ Shoes must be cleaned, changed or covered prior to entering if they are visibly dirty or soiled
- ❒ Other (specify): _____
- ❒ Sign in below to indicate they are informed of and understand the visitor policy

Date	Visitor's Name	Company Name, Purpose of Visit and Location on Premises

Confirmation Signature: _____ ***Date:*** _____

M. Pest Monitoring for Production Sites and Buildings

Instructions: *Traps and control methods must be* ***monitored*** *a minimum of once a month (when in use) and the findings and action taken (if applicable) recorded below. Each trap or area controlled (e.g., for insects) must be recorded. Make additional copies as necessary.*

Building ID #/Name: _____

Date	**Device Number** (same as Form A) **or Area Controlled** (e.g., insect traps)	**Findings**	**Action Taken** (Cleaned area or traps, disposed of in garbage, chemical treatment, changed traps, etc.)	**Person Responsible**

Confirmation Signature: _____ ***Date:*** _____

N1. Water Treatment Control and Monitoring

Instructions: *If using chlorine to treat water, complete the following chart to control and monitor your chlorine treatment at least daily or more frequently based on your operation's needs. Refer to Appendix B -- Chlorination of Water for Fluming and Cleaning Fresh Fruits and Vegetables and Cleaning Equipment – An Example, for an example of chlorinating instructions.*

Water Source: _____ **Concentration of Chlorine**: _____

Method (e.g., injection): _____ **Volume of Water**: _____

Re-circulated Water: ☐ **Yes** ☐ **No** **Contact Time**: _____

Month/Date: _____

Date/ Time	Pre-treatment Concentration of Chlorine (ppm) or ORP	Amount of Chlorine Added	Post-treatment Concentration of Chlorine (ppm) or ORP	pH of Water	Water Changed (✓)	Person Responsible

Confirmation Signature: _____ ***Date:*** _____

N2. Water Temperature Control and Monitoring

Instructions: *If water potability is* ***not maintained*** *and product (i.e. tomatoes) is immersed in water during fluming or washing (e.g., dump tank, pit), complete the following chart to record your water and product temperatures.* ***Monitor each load of product to ensure that the product is at least 5.5°C or 10°F colder than the water (i.e., water is at least 5.5°C or 10°F warmer than the product).***

Water Source: _____ **Method** (e.g., dump tank): _____

Product: _____ **Month**: _____

Date/ Time	Temperature of Water (°C/°F)	Temperature of Product (°C/°F)	Difference between the two temperatures	Corrective Action Taken (e.g., cool product, hold, etc.)	Person Responsible

Confirmation Signature: _____ ***Date:*** _____

O. Transporting Product

Instructions: *Complete for all product being transported to someone else's premises.*

Month: _____

Date	Vehicle Inspected?		Product Identifier (Lot ID/Pack ID/Row/ House/ Zone/Pallet/Bin Tag) **(Same as on Form P or Q)**	Quantity Shipped	Truck/ Trailer ID#	Destination and Customer	Person Responsible (Loader)
	✓ if OK or record hazard* and corrective action**	✓ If covered					

Inspect vehicles for the following items:

1. Signs of pest intrusion
2. Damage (e.g., splinters, holes)
3. Odours (e.g., chemicals, oil)
4. Foreign materials: manure, garbage, glass, oil, chemicals, plant or animal debris, etc.
5. Maintenance required (e.g., hinges, locks or load-securing devices)
6. Refrigeration (e.g., leaking)

**** Corrective Actions**: If any hazards were identified above, the following may be considered:

A. Refusal to load product onto vehicle
B. Sweep
C. Rinse
D. Maintenance (e.g., repair hinges, locks, load securing devices)
E. Wash/clean with soap
F. Other

Confirmation Signature: _____ ***Date:*** _____

ONGOING

P. Harvesting and Storing Product

Instructions: *Complete for any harvested product that is:*

- *Put into harvested product packaging materials*
- *Harvested in bulk*
- *Put into storage.*

Completed by: _____ ***Date:*** _____

Storage Name/Area/ID#: _____

Product and Variety	*PHI/ EAHD met (Forms H1 and H2 verified) (✓) and initial	** Production site was assessed (✓)	Harvest Date	Quantity/ Units Harvested	Row/House/ Zone #/Pallet/Bin Tags (Same as Forms H1 and H2)	***All Glass Intact (✓)	Packaging Materials Used	Date Product Put into Storage

**Forms H1 and H2 have been verified to ensure that harvested product meets the required pre-harvest interval PHI/EAHD for agricultural chemical application and the spreading of manure.*

***The production site was surveyed to ensure that there were no signs of obvious contamination (e.g., oil or chemical spill, portable toilet leaking, flooding, animal intrusion, etc.) before harvest*

****Place a (✓) if during harvest there were no reports of broken glass either from panes or bulbs.*

Confirmation Signature: _____ ***Date:*** _____

Q. Packing and Storing Market Product

Instructions: *Complete for any of the following activities:*

- *Harvested product being packed into **market ready packaging materials** (both in the production site and packinghouse, and includes your own and others' product).*
- *All packing activities that involve **market product** (see glossary definition of "Packing")*
- *Market product being put into storage*

Date Harvested/ Market Product Received/ Put into Storage	Name of Who Produced the Product	Product/ Variety	* PHI/ EAHD met (Forms H1 and H2 verified) (✓)	** Production site was assessed (✓)	Harvest Date	Row/ House/ Zone #/Pallet/Bin Tag (Same as on Forms H1 and H2 or P)	***All Glass Intact (✓)	Pack ID	Packing Date	Quant-ity	Lot ID	Primary Packag-ing Material Used	Secondary Packaging Material Used	Packaging checked for cleanli-ness (✓ if OK)	Date Market Product Put into Storage

**Forms H1 and H2 have been verified to ensure that harvested product meets the required pre-harvest interval PHI/EAHD for agricultural chemical application and the spreading of manure.*

***The production site was surveyed to ensure that there were no signs of obvious contamination (e.g., oil or chemical spill, portable toilet leaking, flooding, animal intrusion, etc.) before harvest.*

****Place a (✓) if during harvest there were no reports of broken glass either from panes or bulbs.*

Confirmation Signature: _____ ***Date:*** _____

R. Deviations and Corrective Actions

***Instructions**: List all major deviations, complaints and their related cause(s), corrective action(s), preventative measures and modified procedures. Record that employees have been trained on the new procedures.*

Date/Time of Deviation or Complaint and Person Notified	Major Deviation/Complaint and Description	Cause of Deviation/Complaint	Corrective Action(s)	Prevention of Recurrence (e.g., training employee)	New/Modified Procedures	Employees Trained on New/Modified Procedures? (✓)	Signature of Person Responsible for Re-Training/Carrying out Deviation Procedure

Confirmation Signature: _____ ***Date:*** _____

S. Allergen Information – Assessment

Instructions: *Fill out the chart below to assess the potential risks of allergens in your operation. Column I indicates the allergens from a practice used in the production of the product. Column II indicates the allergens from something in the production site (e.g., rotational crop). Column III indicates the allergens that may be found in the product, from addition or cross-contamination. Column IV indicates the allergens present in other products that are run on the same equipment/area but at a different time. Column V indicates whether any allergens are present in a building/vehicle.*

Each box of the table must be filled with a YES or a NO. All allergens listed are those identified by Health Canada and enforced for labelling by the Canadian Food Inspection Agency.

Completed by: _____ ***Date:*** _____

Production Site ID/Building ID #/Name: _____

	Column I	**Column II**	**Column III**	**Column IV**	**Column V**
Component	Present from a production practice	Present in the production site	Present in the product	Present in other products handled on the same line/area	Present in the same building/ vehicle
Peanut or its derivatives, e.g., Peanut - pieces, protein, oil, butter, flour, and mandelona nuts (an almond flavoured peanut product) etc. Peanut may also be known as **ground nut**.					
Tree Nuts e.g., almonds, Brazil nuts, cashews, hazelnuts (filberts), macadamia nuts, pecans, pine nuts (pinyon, pinon), pistachios and walnuts **or their** derivatives, e.g., nut butters and oils etc.					
Sesame or its derivatives, e.g., paste and oil etc.					
Milk or its derivatives, e.g., milk caseinate, whey and yogurt powder etc.					
Eggs or its derivatives, e.g., frozen yolk, egg white powder and egg protein isolates etc.					
Fish or its derivatives, e.g., fish protein and extracts etc.					
Shellfish (including crab, crayfish, lobster, prawn and shrimp) **and Molluscs** (including snails, clams, mussels, oysters, cockle and scallops) **or their** derivative, e.g., extracts etc.					
Soybeans or its derivatives, e.g., lecithin, oil, tofu and protein isolates etc.					
Cereals containing gluten and their derivatives (specify which cereal (wheat, rye, barley, oats, spelt, kamut or their hybridised strains)).					
Sulphites, e.g., sulphur dioxide and sodium metabisulphites etc. If yes, what is the amount in ppm? _____					
Mustard and products thereof					
Others (as considered necessary for the customer)					

Confirmation Signature: _____ ***Date:*** _____

T. Food Defense

Instructions: *This form is intended to assess whether potential food defense/security risk factors exist. Consider if there could be a risk in the following categories and implement appropriate security measures. If additional risks were identified, describe them below. Detailed information can be found in Appendix T:* Food Defense: Assessment of Possible Risks and List of Security Measures *if further assistance is required.*

Inside Security Risk Assessment

To protect product from intentional contamination, assess possible inside risks (e.g., packing area/facility security, agricultural chemical storage security, product security, information security, etc.).

The following potential risk factors have been assessed and appropriate security measures have been implemented:

- ❒ General security (e.g., signs, observations, areas etc.)
- ❒ Storage/Building Security
- ❒ Water/Ice Security
- ❒ Agricultural Chemical/Cleaning and Maintenance Materials Control Security
- ❒ Information Security

Personnel Security Risks

To prevent personnel security risks, ensure that only authorized personnel (e.g., employees, visitors, etc.) are within the operation and employees are trained on food defense/security measures

The following potential risk factors have been assessed and appropriate security measures have been implemented:

- ❒ Personnel Security (e.g., check references, check IDs, security training, etc.)

Outside Security Risk Assessment

To prevent unauthorized access by people, entry of unapproved inputs, or intentional contamination of product assess possible outside risks (e.g., production site/building security, mail handling security, etc.)

The following potential risk factors have been assessed and appropriate security measures have been implemented:

- ❒ Physical Security (e.g., door locks, lighting etc.)
- ❒ Entry of inputs/product (e.g., loading/unloading etc.)

If other risks have been identified, list those below, along with the corrective actions taken:

_____

_____

_____

_____

_____

Confirmation Signature: _____ ***Date:*** _____