

8. Equipment

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| Forms Required | A, I |
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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.

- Production site equipment is used on the premises
- Building equipment is used on the premises

*If ANY of the above circles has been checked off, proceed below.
If not, proceed to Section 9: Cleaning and Maintenance Materials.*

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| 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”. |
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8.1 Purchasing, Receiving and Installation

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

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| REQUIREMENT | <i>Equipment must be purchased or built so that its design, construction and installation are not a source of contamination to product.</i> |
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PROCEDURES:

Production Site Equipment (includes trailers, wagons, etc. used for field packing market product)

- The person responsible ensures that calibration instructions are received with equipment or are written based on expert recommendations and made available (File under Tab: Calibration Instructions OR _____). Refer to *Appendix E: Agricultural Chemical Application Equipment Calibration - An Example* for further information
- The person responsible ensures that design and construction of production site equipment (e.g., knives, tines, prongs, cutting blade/picking head of the harvester, cultivator/sprayer panels that touch product, field-packing equipment surfaces), will not be a source of contamination to the 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) Buildings Sketch and Agricultural Chemical Storage Checklist OR _____
- The person responsible ensures that calibration instructions are received with equipment or are written based on expert recommendations and made available (File under Tab: Calibration Instructions OR _____) (e.g., for scales to weigh chemicals, water treatment equipment)
- The person responsible ensures that design and construction of building equipment (e.g., packing, sorting, grading, repacking 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, hard plastic material, puckboard, rubber) (except for pallets, rollers and brushes)
 - Are equipped with shatterproof lights (if applicable), or are covered (e.g., prevent glass from falling onto product or packaging material) (e.g., packing line, forklift, bin pilers)
- The person responsible receives only the equipment that was purchased or selected
- 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 handled or 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

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| REQUIREMENT | <i>Equipment use must not contribute to the contamination of product. Equipment must be properly cleaned, have planned maintenance, and be repaired and inspected. Maintenance activities must not contribute to the contamination of product.</i> |
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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 inspects equipment (e.g. harvester, conveyors, tables) for proper functioning (e.g., checks for faulty or loose parts) and performs maintenance as needed. The results of the inspection are recorded on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

FOR ASPARAGUS, SWEET CORN, AND LEGUMES AND FRUITING VEGETABLES, SMALL FRUIT LEAFY VEGETABLES AND CRUCIFERAE AND TREE AND VINE FRUIT

- ! Weekly (at a minimum when in use) – The person responsible ensures that production site equipment (EXCEPT FOR LADDERS – annual cleaning) (e.g., mechanical harvester blade, conveyer belt) is clean by (*choose at least one of the following options*):

Cleaning Procedure

- 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 _____

FOR POTATOES AND BULB AND ROOT VEGETABLES

- !● Annually (before use) – The person responsible ensures that production site equipment (e.g., mechanical harvester blade, conveyer belt) is clean by (*choose at least one of the following options*):

Cleaning Procedure

- 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.]

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

FOR ALL COMMODITIES

- Hand-held cutting and trimming tools that come into direct contact with product are inspected daily when in use for damaged or broken tips. If knives are damaged or broken then corrective action is taken (*Refer to Section 23. Deviations and Corrective Actions*).

- Hand-held cutting and trimming tools that come into direct contact with product and the tool's case/sheath/cover are properly cleaned:
 - Daily before use
 - Using water with friction; water and soap; or 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 _____

Knives are not retractable (e.g., boxboard cutters, retractable utility knives)

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

If compressed air is used in direct contact with product or food contact surfaces, the person responsible maintains compressed air equipment as per manufacturer's instructions or according to a written procedure based on expert recommendations (File under Tab: Other Procedures OR _____).

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

- Hoses for potable water uses are/have:
 - Ends that are kept up off the ground
 - Stored in a way that prevents contamination
 - Flushed out before EACH use

! Agricultural chemical application equipment is rinsed or flushed according to label instructions when applying agricultural chemicals (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 methods that do not present a risk of contamination 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 (including equipment within open-air, temporary packing/repacking structures)

- Equipment is not used (whether in use or not) for livestock/poultry slaughter or meat processing activities
- Before each use (EXCEPT FOR SMALL FRUIT, POTATOES AND TREE AND VINE FRUIT – 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 leaks, broken, loose, corroded or damaged parts, chipping paint, rust, rotting wood, cleanliness)

! Weekly (at a minimum when in use) – The person responsible inspects equipment (e.g., grading table, packing/repacking line, buncher, baggers) for proper functioning (e.g., checks for faulty or loose parts) and performs maintenance as needed. The results of the inspection are recorded 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 with 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 _____

Knives are not retractable (e.g., boxboard cutters, retractable utility knives)

● Cloths used for wiping product are:

- laundered daily by the operation
- used for only one commodity at a time
- dedicated only for wiping product (e.g., not for other cleaning purposes, drying hands, etc.)

If compressed air is used in direct contact with product or food contact surfaces, the person responsible maintains compressed air equipment as per manufacturer's instructions or according to a written procedure based on expert recommendations (File under Tab: Other Procedures OR _____).

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

● Hoses for potable water uses are/have:

- Ends that are kept up off the ground
- Stored in a way that prevents contamination
- Flushed out before EACH use

Hand-held cutting and trimming tools that come into direct contact with product are inspected daily when in use for damaged or broken tips. If knives are damaged or broken then corrective action is taken (*Refer to Section 23. Deviations and Corrective Actions*).

● Hand-held cutting and trimming tools that come into direct contact with product and the tool's case/sheath/cover are properly cleaned:

- Daily before use
- Using water with friction; water and soap, or 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

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| REQUIREMENT | <i>An effective calibration program must be followed for all equipment requiring calibration.</i> |
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PROCEDURES:

Production Site Equipment

- At the start of the season, when inspection results indicate a need, when equipment is changed and/or if tractor speeds are adjusted, the person responsible calibrates production site equipment as per calibration instructions.
- 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 (including seed treaters, granular/liquid applicator, etc.)
 - ! Scales (if used to weigh agricultural chemicals)
- The person responsible records detailed results of the calibration for agricultural chemical applicators (File under Tab: Calibration Instructions).
- ! 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 (e.g., belts or sprockets are changed), the person responsible calibrates the equipment as per calibration procedures
- ! • The person responsible calibrates the following building equipment (*check all that apply; if not applicable, proceed to Section 8.4: Storage*):
 - ! pH meter (if used to verify water treatment)
 - ! ORP meter (if used to verify water treatment)
 - ! Scales (if used to weigh agricultural chemicals)
 - Other (*specify*): _____

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| FOR TOMATOES AND APPLES ONLY |
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| <ul style="list-style-type: none">• The person responsible calibrates the following building equipment<ul style="list-style-type: none"><input type="checkbox"/> Thermometers (if used to verify internal temperature of product and water) |
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- ! The person responsible records the calibration activity on Form (I) Equipment Cleaning, Maintenance and Calibration OR _____

FOR ALL COMMODITIES

8.4 Storage

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| REQUIREMENT | <i>Equipment must be stored in designated area(s) so that it will not contribute to the contamination of product.</i> |
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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 | | | | | | |