

PrimusGFS Standard v1.6

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Introduction

This Standard document shall be used according to the instructions described in the "PrimusGFS – General Regulations".

The PrimusGFS Standard details the requirements the operation shall comply with in order to obtain the certification. Additionally to this, there is a document named "PrimusGFS - Questions and Expectations" that shall be used in conjunction when performing the certification audits.

1 Food Safety Management System (FSMS)

1.01 Management System

There shall be a food safety policy detailing the company's commitment to food safety and a documented food safety management system or manual that covers the scope of the certification and includes the procedures for food safety processes. The documented Policy should include a clear statement and detailed objectives of the company's commitment to meet the food safety needs of its products.

The company shall have a documented organizational structure that specifies functions and responsibilities for employees whose activities affect food safety. A food safety committee shall be established and records of their meetings shall be kept as proof of the company's ongoing commitment to the food safety program. Senior management shall be involved in the meetings.

A verification of the food safety management system shall be undertaken and documented at planned intervals.

The company shall have evidence that senior management has determined and provided the resources needed to implement and improve the food safety related processes.

1.02 Records Requirements

Records shall be made in permanent ink and without the use of correction fluid and they shall be maintained in an organized and retrievable manner.

All records shall be stored for a minimum period of one year or for at least the shelf life of product if greater than a year or longer if there are customer or legal requirements applicable. There shall be a person or group responsible for the documents and records related to the FSMS and there shall be measures to insure against record loss.

1.03 Procedures and Corrective Actions

There shall be documented procedures covering good agricultural and/or good manufacturing practices related activities in the operation. These procedures shall be developed by the organization making sure they include all the relevant information for the activities to be performed in the operations.

Written procedures shall include the corrective actions to be taken in case of any deficiency affecting food safety is identified in the organization. Corrective actions shall include the

review of the non conformance, the determination of the causes, the establishment of an action plan address such non conformances and prevent future occurrences, the implementation of corrective actions to and the follow-up to ensure the actions have solved the problem. Records of the corrective action activities shall be kept on file.

Documented procedures shall be available to relevant operators involved in performing the related activities described in the procedures.

1.04 Internal and external inspections

There shall be a system for internal inspections of the operations (field and/or facility) covering any process impacting food safety. These internal inspections shall be documented as well as the corrective actions taken to address any issue identified that may affect safe food production. Internal inspections shall be performed using as guidance the current "PrimusGFS - Questions and Expectations" document.

Written procedures for handling regulatory inspections shall be available. Records of regulatory and/or contracted inspections shall be kept on file, including company responses and corrective actions taken.

Calibration procedures shall be available for the equipment used for measuring and monitoring processes related to food safety. Records of calibration shall be kept to ensure correct and accurate operation.

1.05 Rejection and release of product

A documented procedure shall exist to explain how product is going to be handled when it has either been rejected or placed on hold. The procedure shall include details on how the affected product lot(s) is/are separated from other lots in terms of identification and any other physical separation to ensure that affected product is not commingled with other goods. Release of product by authorized personnel shall be included in the procedure.

Rejected product handling and release procedures shall be implemented and related records shall be available.

There shall be a documented system for dealing with customer complaints and buyer food safety complaints. Records of any related incident shall be kept on file, along with company responses and corrective actions.

1.06 Supplier Monitoring

There shall be documented specifications for all ingredients, materials, products and services (including utilities, transport and maintenance) purchased/provided that have an effect on product safety. There shall be a specification review process in place. Documented specifications shall be easily accessed to users.

There shall be a list of approved suppliers and where exceptions are made, approval from management shall be documented. There shall be a written procedure detailing how suppliers are approved and monitored. Third party certifications, second party inspections and any other related documented required as evidence for supplier's approval shall be kept on file.

Supplier control procedures shall ensure that product pesticide residues not exceed the published Maximum Residue Limits (MRL).

1.07 Traceability and Recall

There shall be a documented account that indicates how the company product tracking system works. The system shall be able to trace back to the supplier(s) of materials and also trace forward to indicate which customer(s) received products. The traceability system shall be in evidence when touring the operation and also when checking paperwork. The written traceability system must match the system that is being used in the operation.

Any product, ingredient and/or service related to the food safety that is outsourced shall be properly identified and controlled.

The operation shall have a documented recall system that details the procedures to follow in case of a recall as well as any related information required to perform these procedures. Testing of recall procedures shall be performed and documented at least annually.

There shall be records of unusual occurrences in the operation that may have an impact on the food safety program in place.

1.08 Product testing

There shall be a scheduled testing program based on risk assessment for raw materials, work in progress, packaging and finished goods that have an impact in product safety. This testing program could include microbiological, chemical and physical tests as identified in the risk assessment performed by the organization for the operation(s).

If the risk assessment determined that tests for raw materials, work in progress, packaging and finished goods are required, test methods and frequencies shall be included in the program. There shall be documented evidence of the test results at the scheduled frequencies and with corrective actions for identified deviations.

Testing shall be performed by laboratories with current licenses and/or accreditations. These can be ISO 17025 or equivalent, National Regulations or State Department approvals in the country of production. Documented evidence of this licenses and/or accreditations shall be available for review.

2 GAP Option (from 2.01 to 2.15)

2.01 General GAP

There shall be one person assigned responsibility for the field's food safety program.

2.02 Site Identification

Growing area(s) shall be identified or coded to enable trace back and trace forward in the event of a recall. This system shall be documented.

2.03 Ground History

Growing area(s) shall have a history of crop production for human consumption.

New production areas shall have a documented risk assessment.

Land previously used for non-agricultural activities shall have a soil analysis to confirm that the soil is free of contaminants and/or comply with the levels of pollutants present in the soil.

Land previously used for animal husbandry or as grazing land for livestock shall have a documented risk evaluation including details of the animal grazing (commercial or domestic) and any risk reduction steps.

There shall be no evidence of animal activity in the growing areas. In case of finding evidence of animal activity in the growing area, actions shall be taken based on the risk. The risk shall be evaluated considering all the factors involved, including at least the type of animal, the type of activity (tracks, feather, fecal, etc), the extent of activity (frequency and/or quantity of events), the proximity to the crop itself, the maturity of the crop and how all these factors can affect the contamination of the edible part of the crop.

If flooding from uncontrolled causes occurred on the growing area(s) since the previous growing season there shall be:

- documented evidence (archived for 2 years) that corrective measures were taken to affected land and product
- soil test results on file for the flooded area(s) showing soil was negative or within an appropriate regulatory agency's approved limits for contaminants.

Operations growing under organic principles shall have current certification by an accredited organic certification organization on file.

2.04 Adjacent Land Use

The land adjacent to the growing area shall not be a possible source of contamination from intensive livestock production (e.g. feed lots, dairy operations, poultry houses, meat rendering operation). If there is evidence of intensive livestock production, corrective actions and/or prevention shall be effective.

There shall be no evidence of domestic animals, wild animals, grazing lands, etc., in proximity to the growing operation. If domestic animals, wild animals, grazing lands, etc., are in proximity to the growing operation, there shall be effective measures (e.g. buffer zone, physical barrier, ditch, etc.) in place to restrict animal or potential contaminant movement.

There shall be no evidence of untreated animal manure piles, compost, biosolids, or non-synthetic amendments stored and/or applied on adjacent land. If there is evidence, there shall be effective measures (e.g. buffer zone, physical barrier, ditch, etc.) in place to restrict potential contaminant movement. Adjacent landowners using biosolids shall supply biosolid class information.

The growing area shall not be situated in a higher risk location where contamination could occur from nearby operations or functions (e.g. leach fields, runoff or potential flooding from sewers, toilet systems, industrial facilities, labor camps). If any case of this exists, there shall be effective measures in place to mitigate risk.

The growing area shall have a documented policy, supported by visual evidence, that infant or toddler aged children are not allowed in the growing operation, in or around any packaging, chemical or equipment storage areas.

2.05 Pest and Foreign Material Controls - Applicable for greenhouses only

There shall be a documented policy, supported by visual evidence, that domestic and wild animals, livestock, or birds are not allowed in the growing facility.

All entry points to growing facility(ies), storage and packaging areas shall be protected to prevent entry of rodents or birds.

There shall be a written pest control program, including a copy of the contract with the extermination company (if used), Pest Control Operator license (if baits are used) and insurance documents.

There shall be service reports created for pest control checks detailing inspection findings, application records and corrective actions.

If used, pest control devices (inc. rodent traps and electrical fly killers) shall be:

- Located away from exposed food products. Poisonous rodent bait traps shall not be used within the growing facility or inside any storage or packaging areas.
- Maintained in a clean and intact condition and marked as monitored (or bar code scanned) on a regular basis.
- Properly installed and secured.
- Identified on a schematic drawing of the facility, both inside and outside.

All foreign material risks shall be removed and/or accounted for and controlled. Examples include metal filings (maintenance), glass lights, push pins, staples, etc.

There shall be a documented glass management policy and procedures for handling glass items or structures in the operation.

The growing facility(ies) including grounds and any packaging and storage areas shall be clean and well maintained.

If applicable, the compost and/or substrates shall be received and stored separated from crop production and packaging and other storage areas.

2.06 Growing Media (Substrate) Use - Applicable for greenhouses only

If a hydroponic system is used, and excess solution is recycled, there shall be records detailing how the solution is treated for recycling.

If substrates are used (e.g. sand, gravel, vermiculite, rockwool, perlite, peat moss, coir, etc.) and they are sterilized, there shall be records of the location, date of sterilization, time/temperature readings, operator's name and pre-plant interval.

2.07 Fertilizer/Crop Nutrition

Untreated human sewage sludge shall not be used in the growing operation.

Compost, biosolids, untreated animal manure and/or other non-synthetic crop treatments (e.g. compost teas, fish emulsions, fish meal, blood meal, "biofertilizers") shall not be applied during the growing season and shall be incorporated into the soil. Records shall show intervals between application and harvesting and these shall comply with national and/or local legislation/guidelines where they exist, if they do not exist, international guidelines shall be used.

Certificates of analysis shall be available for each lot of compost, biosolids and other non-synthetic crop treatments used. Tests shall include microbiological/heavy metal analyses.

Biosolids or untreated animal manure shall not be applied to crops where the country of production regulations/guidelines ban the use such materials.

There shall be records of organic and/or inorganic fertilizers applications. The records shall be legible and detail (at least) date of application, type of fertilizer, amount, method of application (drip, bulk, etc.), and operator name.

There shall be a Certificate(s) of Analysis (COA), letters of guarantee or some other documents from the inorganic fertilizer supplier(s) that specifies all the ingredients, including inert materials.

Where soil amendments that do not contain animal products are used, appropriate controls shall be in place for the application and to guarantee the material.

The fertilizers and/or fertilizer containers shall be stored in a manner to prevent contamination to the growing area(s) or any water sources.

2.08 Irrigation/Water Use

There shall be microbial water testing including generic *E.coli* for all water sources used for irrigation, crop protection/fertilizer and frost or freeze prevention programs.

There shall be one sample per water source collected and tested according to risk assessment and/or expected frequencies. Minimum requirements:

- Samples for microbial testing shall be taken at a point as close to the point of use as practical.
- Samples shall be taken prior to use if last water test was more than 60 days ago.
- Routine samples shall be collected no less than 18 hours apart and at least monthly during use.
- There shall be documented procedures covering proper sampling protocols including sample identification information.
- There shall be written procedures (SOPs) covering corrective measures for unsuitable or abnormal water test results.
- There shall be documented corrective measures if there are unsuitable or abnormal results of a microbiological test.

There shall be a separation between untreated manure and well(s), reservoir, canals or other water sources. The distance of this separation shall depend on the risk variables e.g. topography (uphill or downhill), amount of material stored, location of storage, type of water source and others.

Well(s), reservoir(s), canals or other water sources shall be built, designed and maintained to prevent contamination.

The well(s), reservoir(s), canals or other water sources shall be free from contamination issues and measures shall be taken to minimize contamination.

There shall be records of inspections and treatments of all water sources used for irrigation, crop protection/fertilizer and frost or freeze prevention programs.

Animals (domestic, livestock, or wild) shall not have access to the water source(s).

Water sourced from rivers, canals, etc., shall be under the direction of a water authority or district.

If reclaimed water is used, water shall be subject to applicable local and national regulations and standards. Prior to using this water for agricultural purposes growers shall check with regulatory bodies to determine the appropriate parameters and tolerances to be used. Records shall be kept.

Check valves, anti-siphon devices, or other back flow prevention systems shall be in place where the water distribution system has the potential of back flowing.

Irrigation equipment that is not in use shall be stored in a hygienic manner, free of pest contamination and clean.

2.09 Crop Protection

There shall be a documented policy and/or procedures for the mixing/loading of crop protection materials. The mixing, loading, or the dilution of crop protection materials shall be performed safely and within a distance where the growing area and water sources are not affected.

There shall be a documented policy and/or procedures for the rinsing and cleaning of crop protection equipment. The rinsing and cleaning of crop protection equipment shall be performed safely and within a distance where the land and water sources are not affected.

Technical recommendations for applications of pesticides shall be undertaken by a qualified person(s). Certificates, licenses or other documentation shall be available. Current valid certificates, licenses, or other documentation recognized by prevailing national/ local standards and guidelines shall be available for supervisors/workers handling, mixing/loading/and applying crop protection products.

There shall be a pesticide application record program that includes (minimum): the applicator's name and certification number (if applicable); month, day, and year of application; crop, commodity, or site where the chemical was applied; product trade name, active ingredient, total amount applied; size of treatment area; and application location. Plant protection applications in the current season shall be up to date.

Where official registration is in place, growers shall have information about the plant protection products for the target plant registered in the country of use.

Crop protection applications shall be restricted by the guidelines established by the product label, manufacturer recommendation, or by prevailing national/ local standards and guidelines.

Grower shall adhere to pre-harvest intervals required on the crop protection chemical product labels, manufacturer recommendations and/or by prevailing national/ local standards.

Where the country of production has no or a partial legislative framework covering plant protection products the use of crop protection products that are registered for the target crop in another country shall be allowed provided the use of this chemical does not contravene any laws in the destination country. The grower shall have information (registration for the specific crop, product labels, Maximum Residue Limit tolerances, banned lists, etc.) for the plant protection products in the country(ies) of destination.

The employee re-entry intervals established by the pesticide label, manufacturer recommendation, or by prevailing national/ local standards or guidelines shall be observed. Posting shall occur on crop protection treatment areas in accordance with product label, national/local standards or guidelines.

Crop protection applications shall be restricted when gusts are excessive.

Crop protection containers stored on the property (even temporarily) shall be stored in a manner to prevent contamination and disposed of responsibly according to the product label, manufacturer recommendation or by prevailing national/ local standards or guidelines.

There shall be documented policies and/or procedures for the monitoring and maintenance of crop protection application equipment. The equipment used for crop protection applications shall be in good working order.

- 2.10 Field Employee Hygiene (Applies to on-farm or greenhouse workers not harvesting workers)
There shall be a written policy supported by visual evidence that employees who appear to be physically ill or become ill while working, with exposed boils, sores, infected wounds or any other source of abnormal contamination are prohibited from contact with product. If labor is supplied by a contractor, a copy of the policy and/or procedures shall be available.

Written procedures shall be in place describing the disposition of product that has come into contact with blood or other bodily fluids. If labor is supplied by a contractor a copy of the policy shall be available.

There shall be a written policy supported by visual evidence that eating (including chewing gum, drinking (other than water) and tobacco use is restricted to locations away from the growing area(s). If labor is supplied by a contractor, a copy of the policy shall be available.

Toilet facilities shall be available for employees:

- Located within ¼ mile or 5 minutes walking distance of all employees.
- In a suitable location to prevent contamination to product, packaging, equipment and growing area.
- A minimum of one toilet facility shall be provided for each group of 20 employees.
- Toilet facilities shall have visuals or signs, written in the appropriate languages, reminding employees to wash their hands before returning to work.

- Toilets shall be maintained in a clean and sanitary condition with records showing regular toilet cleaning, servicing and stocking.
- Toilet catch basins shall be designed and maintained to prevent contamination (e.g. free from leaks and cracks).

There shall be a documented and implemented procedure for emptying toilet catch basins in a hygienic manner that prevents product, packaging, equipment, and water system contamination. The procedure shall include a documented response plan for major leaks or spills for the sanitation units.

There shall be a formal training program for new and existing employees covering current hygiene policies, procedures and requirements of the company. Training shall take place at the start of the season and then at least quarterly, ideally monthly. Training materials and hygiene requirements shall be available.

There shall be operational hand washing facilities provided:

- Located within ¼ mile or 5 minutes walking distance of all employees.
- Situated outside the toilet facility and easily accessible to workers.
- Properly stocked with soap, paper towels and trash can.
- Designed and maintained to prevent contamination i.e. spent water does not go straight to the ground.

There shall be a documented and implemented policy and procedure in place requiring employees to wash their hands prior to beginning work, after breaks, after toilet use and whenever hands may be contaminated.

Fresh potable drinking water shall be provided for workers. Water containers shall be maintained in a clean condition.

There shall be a first-aid kit available and accessible to employees, stocked with inventory.

Trash cans shall be available and placed in suitable locations.

There shall be no foreign material issues that are or could be potential risks to the product in the growing facility(ies) (e.g. jewelry).

2.11 Harvesting Inspections, Policies and Training

A pre-harvest block inspection shall be performed and if harvesting is occurring, it shall show if there are any harvesting restrictions, etc. The harvest crew shall have documentation indicating which blocks have been inspected and cleared for harvest. Where pre-harvest inspection issues arise, buffer zones shall be clearly identified and respected.

There shall be records with corrective actions of daily pre-operation inspections that check key aspects of equipment and tool hygiene, personal hygiene, etc.

There shall be a documented and implemented policy that when commodities (excludes root crops) are dropped on the ground they are discarded.

There shall be a formal training program for new and existing employees covering current hygiene policies, procedures and requirements of the company. Training shall take place at

the start of the season and then at least quarterly, ideally monthly. Training materials and hygiene requirements shall be available.

There shall be a documented and implemented policy stating action if harvesting staff find evidence of animal intrusion e.g. fecal material. The policy shall include recorded training, potential corrective actions and recording correctives actions.

2.12 Harvesting Employee Activities & Sanitary Facilities Harvesting Employee Practices

Employees shall follow appropriate hygiene practices including:

- No harvesting employees with exposed boils, sores, infected wounds, or any other source of abnormal contamination. All bandages shall be covered with a non-porous covering such as plastic gloves.
- No eating and drinking (other than water) in active harvest areas, areas yet to be harvested, near harvested product or storage areas.
- No use of tobacco products in active harvest areas, areas yet to be harvested, near harvested product or storage areas.
- Harvester's clothing shall not pose a cross contamination risk.
- No loose objects e.g. jewelry above the waist. Jewelry shall be confined to a plain wedding band.
- Gloves shall be appropriate for the type of harvesting, in good condition/repair and latex-free.
- Any protective clothing (e.g. gloves, aprons, sleeves) shall be removed prior to using restrooms, going on breaks, etc.

Toilet facilities shall be available for employees:

- Located within ¼ mile or 5 minutes walking distance of all employees.
- In a suitable location to prevent contamination to product, packaging, equipment and growing area.
- Separate toilet facilities provided for men and women in groups larger than 5 employees.
- A minimum of one toilet facility shall be provided for each group of 20 employees.
- Toilet facilities shall have visuals or signs, written in the appropriate languages, reminding employees to wash their hands before returning to work.
- Toilets shall be maintained in a clean and sanitary condition with records showing regular toilet cleaning, servicing and stocking. Toilets shall be supplied with toilet paper and the toilet paper shall be maintained properly
- Toilets shall be constructed of light colored, non-porous materials that are easy to clean and sanitize.
- Toilet catch basins shall be designed and maintained to prevent contamination (e.g. free from leaks and cracks) and emptied /pumped in a safe manner.

For portable toilets, there shall be a documented and implemented policy covering emptying and cleaning; waste shall be disposed of properly and the units cleaned at an appropriate location.

There shall be no evidence of human fecal contamination in the growing area.
There shall be operational hand washing facilities provided:

- Located within ¼ mile or 5 minutes walking distance of all employees.
- Situated outside the toilet facility and easily accessible to workers.

- Properly stocked with non-perfumed soap, single-use paper towels and trash can.
- Designed and maintained to prevent contamination i.e. rinse water is captured/controlled, free of clogged drains, etc.

There shall be a documented and implemented policy and procedure in place requiring employees to wash their hands prior to beginning work, after breaks, after toilet use and whenever hands may be contaminated. Corrective action shall be taken when employees fail to comply with hand washing guidelines.

Fresh potable drinking water and single-use cups shall be provided for workers. Water containers shall be maintained in a clean condition.

There shall be a first-aid kit available and accessible to employees, stocked with inventory.

There shall be a documented and implemented policy and procedure in available and followed stating that any commodities that come in contact with blood shall be destroyed.

Covered trash cans with liners shall be available and placed in suitable locations. Waste and garbage shall be removed on a frequently from harvested and non-harvested areas.

Metal, glass, plastic or other potential contamination issues shall be controlled.

2.13 Harvest Practices

The crop shall be free of any evidence of systematic animal fecal contamination (e.g. flocking geese, escaped cattle, etc.) and any evidence of animal activity in the crop that is a potential food safety risk.

Where the product is packed in the final packing unit in the field:

- The packing material (e.g. cartons, bags, clamshells, sacks, RPCs) intended for carrying product shall be used for that purpose only and shall be free from evidence of pest activity, foreign materials and other signs of hazardous materials.
- The packed product shall be free from evidence of pest activity, foreign materials, hazardous materials and any adulteration issues.
- The product and packing material shall be free from exposure to the ground and or any handling contamination.
- Packaging materials shall be inspected prior to use and after the packing process; when contamination issues are found, corrective action shall be recorded.
- If packing materials are left in the field overnight they shall be secured and protected.

Where grading and packing tables and/or re-usable containers are used:

- The surface(s) shall allow for easy sanitation.
- There shall be a documented cleaning program detailing the frequency of cleaning and sanitizing procedures. Records shall be maintained.
- An anti-microbial solution (chlorinated or equivalent) shall be used to sanitize items after cleaning has occurred.
- Handling practices shall not cause contamination.

Where tools (e.g. knives, clippers, scissors, etc.) are used in harvesting:

- They shall be made of non-corrosive and easy to clean materials (no wood or fabric parts).

- Shall not be taken into break or toilet areas or used for any other purpose other than product harvesting.
- Shall be free from exposure to the ground and or any handling contamination.
- Shall be subject to control procedures for storage when not in use.
- There shall be a documented cleaning program detailing the frequency of cleaning and sanitizing procedures. Records shall be maintained.
- An anti-microbial solution (chlorinated or equivalent) shall be used to sanitize the harvesting tools after cleaning has occurred.
- Harvesting tool dips solutions shall be used and anti-microbial solution strength maintained. Records of the solutions checks shall be maintained.

Where machinery is used in the harvesting process:

- Food contact surfaces shall be made of non-toxic, non-porous food grade materials e.g. stainless steel that are easy to clean. Food contact surfaces on equipment shall be free of flaking paint corrosion, rust, etc., and maintained in good condition.
- There shall be a documented cleaning program detailing the frequency of cleaning and sanitizing procedures. Records shall be maintained.
- An anti-microbial solution (chlorinated or equivalent) shall be used to sanitize the harvesting equipment after cleaning has occurred.
- The equipment shall be designed and used properly to minimize product contamination (e.g. drip pans utilized, lights protected).
- Only food grade lubricants shall be used on critical parts of the harvesting machinery that have the potential to contaminate product.
- Glass (e.g. lights) on harvesting machinery, in-field trucks and tractors shall be protected There shall be no evidence of cracked lenses.
- All platforms above product, packaging or food contact surfaces (e.g. belts) on the harvest machinery, in-field trucks shall be fitted with protection to prevent product contamination.

Where water directly contacts edible portions of harvested crop (e.g. rehydration, core-in-field) there shall be one sample per water source collected and tested according to risk assessment and/or expected frequencies. Minimum requirements:

- Samples shall be tested for generic *E.coli* (minimum).
- Samples for microbial testing shall be taken at point as close to the point of use as practical.
- Samples shall be taken prior to use then ideally monthly, or at frequency relative to the associated risks.
- There shall be documented procedures covering proper sampling protocols including sample are identification information.
- There shall be written procedures (SOPs) covering corrective measures for unsuitable or abnormal water test results.
- There shall be documented corrective measures if there are unsuitable or abnormal results of a microbiological test.
- Anti-microbial parameters shall be clearly documented and correct for the type anti-microbial being used.
- Anti-microbial checks shall be performed on a routine basis; corrective actions shall be recorded when anti-microbial results are less than the stated minimum criteria.

Where the harvested product is "in-field processed" or "in-field semi-processed" (e.g. core in field, top & tail, florets, etc.), the process flow, machine layout, employee control, utensil

control, etc. shall ensure that processed products are not contaminated by unprocessed products.

All employees that come in contact with the product being harvested shall wear clean protective outer garments (e.g. hairnets, plastic gloves, sleeves and aprons). Protective outer garments shall be removed and kept clean and in a secure area during breaks or when using the toilet facilities.

All plastic bin liners shall be closed and secured immediately after harvest to avoid contamination of the harvested product.

2.14 Transportation & Tracking

Vehicles transporting fresh produce from field to facility shall be limited to this function only and maintained in proper condition.

There shall be a system in place to ensure product can be traced back to each exact growing location (e.g. grower identification, farm identification, block, etc.).

Product that is packed in the field after harvesting shall be coded to identify date of harvest and production area information. This identification coding shall be present in the primary packaging and if secondary packaging is used, the identification shall be present in this also.

2.15 On-site Storage

On-site storage for items and/or equipment used in the harvest process (e.g. packing material, cartons, clamshells, re-usable containers, disinfectants, grading/packing tables, RPCs, etc.) shall be stored to prevent cross contamination.

On-site storage areas shall have active, documented sanitation and pest control programs.

2 GMP Option (from 2.16 to 2.31)

2.16 General GMP

There shall be a qualified person assigned responsibility for the facility food safety program.

Chemicals shall be stored safely in a designated secured area. "Food grade" and "non-food grade" chemicals shall be handled and stored in a controlled manner.

Visible and understood signs supporting appropriate Good Manufacturing Practices shall be posted to remind workers of proper practices.

2.17 Pest Control

Products, ingredients, packaging supplies, production and storage areas as well as the exterior of the facility shall be free of insects/rodents/birds/reptiles/mammals or any evidence of them.

The operation shall have a pest control program in place with the following characteristics:

- Pest control devices shall be located away from exposed food products and poisonous rodent bait traps shall not be used within the facility.
- Pest control devices shall be maintained in a clean condition and marked as monitored on a regular basis.

- Interior, exterior building perimeter and land perimeter pest control devices shall be in the appropriate number and location depending on the facility needs like size, design, level of presence of pests, etc.
- Pest control devices shall be identified by a number or other code.
- Pest control devices shall be properly installed and secured.

2.18 Storage Areas & Packaging Materials

Ingredients (including ice), products, and packaging shall be stored appropriately to prevent cross contamination including:

- Off ground
- Ice shall be stored and used appropriately
- Allergen control
- In completely enclosed storage.
- Storage areas shall be clean.
- Non—food handling related items shall not be stored in storage areas.
- Rejected and on-hold items shall be clearly identified and stored separately from other materials.
- Storage shall be at the appropriate temperatures for the specific products being stored.

Products, ingredients (including ice) and food contact packaging shall be within accepted tolerances for spoilage or adulteration

Commodities, packaging, ingredients, processing aids, work in progress, etc., shall be properly marked with rotation codes and rotated using FIFO policy.

2.19 Operational Practices

Process flow, facility layout, employee control, utensil control, internal vehicle use, etc. shall ensure that finished (processed) products are not contaminated by raw (unprocessed) products

Packing and/or processing areas shall be completely enclosed, clean and well maintained, with all exposed materials (product, packaging, etc.) protected from overhead contamination.

Raw ingredients shall be examined before use and foreign material control methods (e.g. metal detectors, metal traps, visual inspection, etc.) shall be used where appropriate and regularly tested.

Finished products (carton and unit) shall be coded for the day of production and any re-work / re-packaging shall be coded according to the original product information.

The facility shall have the appropriate test strips, test kits or test probes in operational condition, for verifying the concentrations of anti-microbial chemicals (product washing water, terminal sanitizers, dip stations, etc).

Hand washing stations and toilet facilities shall be appropriate in number, in location, in working order, have warm water and be properly stocked.

Secondary hand sanitation stations and foot dip stations shall be provided in the facility and they shall be properly maintained. The number and location of these stations shall be

established based on the number of employees, the facility entrances, the process flow and other factors that may present a contamination risk.

Single services containers shall be used for their intended purpose only and re-usable containers shall be clearly designated for the specific use.

Food safety measuring devices shall be calibrated and in good working condition.

2.20 Employee Practices

Employees shall follow appropriate Good Manufacturing Practices including:

- Employees shall wash and sanitize their hands before starting work each day, after using the restroom, after breaks and whenever hands may be contaminated.
- Employees' fingernails shall be clean, short and if gloves are not used, free of nail polish.
- Where gloves are used, they shall be latex-free (e.g. vinyl, nitrile) or powder-free latex.
- Employees with boils, sores, open wounds or exhibiting signs of foodborne illness shall be excluded from operations involving direct and indirect food contact.
- Employees shall wear hair nets (or similar hair restraints) and beard-nets.
- Jewelry shall be confined to a plain wedding band.
- All cuts and wounds shall be covered with waterproof detectable blue bandages (Band Aids) that contain a metal strip.
- Employees shall wear outer garments suitable for the operation; no items shall be stored in top pockets and protective outer garments shall be removed and stored in a designated area when on break and before using the toilets and when going home at the end of their shift.
- Smoking, eating, chewing and drinking shall be confined to designated, non-production areas.
- Employees' personal items shall not be stored in the production and material storage areas.

2.21 Equipment

Equipment design and condition shall facilitate effective cleaning and maintenance; food contact and non-food contact surfaces shall be free of flaking paint, corrosion, rust and other unhygienic materials.

Monitoring thermometer(s) that are independent from the thermostat probe(s) shall be present in all coolers and freezers. Thermometers shall be non-glass and non-mercury.

2.22 Equipment Cleaning

Food contact and non-food contact surfaces and items (barrels, bins, etc.) that are used to hold or store product shall be clean. Excess lubricants and grease shall be removed from equipment.

Cooling units including coils in coolers and freezers shall be clean and free of aged, dirty ice and all fan guards dust-free with the ceiling in front of the fans free of excessive black deposits.

During cleaning foods and packaging shall be protected and stored equipment that is not used on a daily basis shall be stored in a clean condition with food-contact surfaces protected and/or retained on cleaning schedule.

All utensils, hoses, and other items not being used shall be stored clean and in a manner to prevent contamination. Maintenance tools that are used in the production and storage areas of the facility shall be clean, sanitary and corrosion free.

2.23 General Cleaning

Waste and garbage shall be frequently removed from packing and storage areas and spills shall be cleaned up immediately.

Floor drains shall flow in a manner that prevents contamination (e.g. from high to low risk areas, from high risk directly to drain system), covered, clean, free from odors and well maintained.

High level areas including overhead pipes, ducts, fans, etc. shall be clean. Plastic strip curtains shall be maintained in a good condition, kept clean and mounted so that the tips are not touching the floor.

Safety equipment for the sanitation crew shall be provided. It shall be in good condition and stored to prevent cross contamination to ingredients, packaging or product.

Cleaning equipment shall be available, stored properly and identified in order to prevent potential cross contamination issues. All items used for sanitation shall be appropriate for their designated purpose.

Toilet facilities, hand wash stations, employee locker and lunchroom facilities shall be clean.

The maintenance shop shall be clean and well ordered.

Internal transport vehicles (e.g. forklifts, bobcats, pallet jacks, trolleys, floor cleaners, etc.), shall be clean, shall not emit toxic fumes and shall be used in a sanitary manner.

Shipping trucks shall be clean and in good condition.

2.24 Buildings and Grounds

All lights shall be intact and protected against breakage. Lighting shall be enough to perform activities in packing and storage areas.

Potential wood, metal, glass or plastic contamination issues shall be controlled.

The facility shall eliminate the use of wooden items or surfaces.

The facility shall have proper ventilation to remove dust, steam, and odors.

Floor surfaces shall be in good condition, with no standing water, no debris trapping cracks and easy to clean. Floor drains shall be located where they are needed for drainage and cleanup.

All water lines shall be protected against back siphonage.

Buildings shall be well maintained to prevent pest entry:

- Doors to the outside shall be pest proof.
- Dock doors shall be fitted with buffers to seal against trucks.
- Dock load levelers and shelters shall be maintained in a good condition, pest proof and debris free.
- Exterior walls shall be free of holes to exclude pests. All pipes, vents, air ducts shall be designed and protected in order to prevent pest entry e.g. by using fine mesh.
- Interior walls and ceilings shall be free of cracks and crevices to prevent pest harborage and allow proper sanitation.
- False ceiling areas shall have access to allow for inspection and cleaning.
- An 18" internal wall perimeter shall be maintained within the facility to allow inspection and cleaning.

Exterior areas shall be well maintained:

- The exterior area immediately outside the facility shall be free of litter, weeds and standing water.
- Storage of pallets, equipment, tires, etc., shall be controlled (i.e. out of the mud, stacked to prevent pest harborage, away from building perimeter).
- Pallets shall be inspected to separate and replace dirty or broken pallets.
- The area around the dumpster/cull truck/trash area shall be clean.
- Outside garbage receptacles and dumpsters shall be kept covered or closed.

The on-site laboratory (where appropriate) shall be completely enclosed and separated from production and storage areas.

2.25 Chemical Files

There shall be copies of all Materials Safety Data Sheets (detergents, sanitizers, pesticides, etc.) on file, clear indexed and fully accessible at all times.

There shall be copies of specimen labels for chemicals used (where the full label is not immediately accessible e.g. rodent chemicals, product sanitizers).

There shall be a chemical inventory and/or usage log.

There shall be specific Standard Operating Procedures (SOPs) for the changing and testing of water and ice systems e.g. washing flumes, hydrovacuums, hydrocoolers, ice making machines, ice injectors, etc.

2.26 Pest Control Documentation

There shall be a documented pest control program, including (where appropriate) a copy of the contract with the extermination company, Pest Control Operator license(s) and insurance documents.

There shall be a schematic drawing of the facility showing numbered locations of all traps and bait stations, both inside and outside the plant.

Service reports shall be maintained for pest control checks detailing inspection records, application records, and corrective actions of issues noted (in-house and/or contract).

2.27 Operation Monitoring Records

Inspection records of incoming goods and incoming trailers shall be on file.

There shall be a daily pre-operation inspection log.

There shall be records for all the process monitoring activities (e.g. pH, water temperature, metal detection, labeling, heating processes, etc.) including anti-microbial strength testing of wash water and ice solutions showing the monitoring frequencies, results and corrective actions if deviations are identified. Anti-microbial in wash water and ice solutions shall be tested prior to start up and throughout the production runs.

Hand/foot/tool dip stations shall be monitored and records of monitoring shall be maintained.

There shall be records of inspection of cutting surfaces of knives and similar hand tools used in the production area as well as inventory of quantities in/out on each shift.

New sites shall be risk assessed for adjacent land use, flooding, environmental pollutants and other food safety issues.

The facility shall have documented evidence to ensure that any food safety hazards relevant to waste water treatments (e.g. settling ponds, land applications, etc.) are controlled.

There shall be an annual certificate of inspection for the backflow prevention systems on water lines into the facility.

2.28 Maintenance and Sanitation Files

The facility shall have a documented preventative maintenance program and schedule.

There shall be records of maintenance work or repairs ordered with signed work completion records showing that equipment is cleaned and sanitized after maintenance work has been completed.

There shall be a documented sanitation program in place which includes:

- A written cleaning schedule (Master Sanitation Schedule) that shows what and where is to be cleaned and how often.
- Written cleaning procedures (Sanitation Standard Operating Procedures) for the facility and all equipment.
- Sanitation records showing what cleaning was done, when and who carried out the cleaning.
- Documented procedures and completion records for clean-in-place (CIP) activities, where applicable (e.g. cleaning re-circulating water systems such as washing flumes, ice injectors, etc.).
- A routine program and written procedure to validate sanitation effectiveness using ATP bioluminescence.
- Records indicating that floor drains are cleaned on a regular basis (minimum daily in wet and fresh-cut production areas).
- Records showing cooling units are serviced and cleaned at least on an annual basis or more frequently as required.

There shall be a documented glass management policy and procedures for handling glass items in the operation.

2.29 Employee Documentation

Records shall be kept of employee training and employee policies and procedures, including:

- Records of new employee food safety (GMP) orientation training (with topics covered and attendees), and a document signed by each employee stating they will comply with the operations' personal hygiene and health policies
- Ongoing employee food safety education training with topics covered and attendees.
- Documented training program with training logs for the sanitation employees including best practices and chemical use details.
- Written procedures in place that require food handlers to report any cuts or grazes and/or if they are suffering any illnesses that might be a contamination risk to the products being produced.
- Written sickness reporting and return to work procedures.
- An employee non-compliance/disciplinary action procedure.

Visitors and contractors shall be required to sign a log stating that they will comply with the operations' personal hygiene and health policies.

2.30 Testing/Analysis Records

There shall be records of routine equipment and environmental microbiological testing.

There shall be at least annual microbiological tests on water used in the facility (sampled from within the facility) and (at least) an annual microbiological test for in-house produced ice or a letter of guarantee from external suppliers of ice.

2.31 Temperature Controlled Storage & Distribution

Appropriate temperature monitoring records shall be available for:

- Final product temperature checks for temperature sensitive product.
- Packing and storage rooms (if refrigerated).
- Shipping truck temperature checks indicating that the truck was pre-cooled prior to loading and sanitary condition logs for shipping trucks (cleanliness, trailer condition, odor, etc.).

3 HACCP

3.01 Applicability of HACCP

This module will not be applicable to field operations, for activities carried out only in the growing area at farm level.

This module will always be applicable to all facility operations.

For facility operations where there is preparation, manufacturing or processing of food, a HACCP system must be in place and the entire section shall be evaluated. In food businesses where there is no preparation, manufacturing or processing of food HACCP may not be required, but this should be determined with a documented hazard analysis of all steps of each process. If the hazard analysis shows that all hazards can be controlled through the

implementation of prerequisite requirements, there will be no need to develop and implement a complete HACCP system.

In ALL cases the HACCP process and system must be in compliance with all legal requirements.

3.02 Management Support of HACCP

There shall be a team responsible for HACCP development, implementation and on-going maintenance and a HACCP coordinator chairing it.

The company shall have formal recorded HACCP training for all employees, especially CCP operators and management.

Any changes in the process, equipment, ingredients etc., shall cause timely reviews of HACCP systems, including hazard analysis, CCP decisions, CCP records and staff training.

The company shall be conducting self audits of the HACCP program in the plant.

Standard operating procedures (SOPs) shall be created for the monitoring process of the HACCP system.

3.03 Development of the Written HACCP Plan

A product description shall exist for each product under the HACCP plan, including the products' intended use, materials and raw ingredients and who the intended consumer is.

There shall be a flow chart of each production process in sufficient detail to completely describe the process or product manufacturing steps.

A documented hazard analysis for the process shall be conducted, showing the various types of hazard and their associated severity. The hazard analysis, where appropriate, shall include allergens.

CCPs shall be developed to control the hazards identified in the hazard analysis.

Monitoring requirements and frequencies shall be determined for the CCPs.

Critical control limits shall be identified for the CCP's and supported by validation documents.

There shall be a clear action plan for operators to follow if the CCP limits are exceeded and it shall describe plans to adjust the process back into control and withhold out of compliance products.

Recording templates or forms shall be developed for monitoring the CCPs.

Specific responsibilities shall be assigned for the monitoring, recording and corrective action management of each CCP.

Verification plans and schedules shall be developed for each CCP.

3.04 Execution of the HACCP Plan on the Plant Floor

All documents noted in the HACCP Plan shall be in place for real time monitoring of the CCPs.

CCP monitoring activities and frequencies shall be in compliance with the HACCP Plan.

CCP operators shall understand basic HACCP principles and their role in monitoring CCPs.

CCP monitoring records shall be signed off (or initialed) by the operator(s) who are carrying out and recording the CCP check(s).

Corrective actions shall be detailed in writing when the failure of a CCP occurs.

CCP records shall be reviewed and signed off daily by the quality control supervisor and/or management. The sign off shall not be done by the same person who carried out the monitoring.

3.05 Verification of the HACCP Plan

Monitoring and verification information shall be reviewed and discussed at management level meetings.

There shall be independent audits of the plant's entire HACCP program conducted at least annually.