

## **Industry Guide for the Development of a Food Safety Program (High Priority Plant Products Industry)**

These include:

- Seed Sprouts
- Fresh Cut Fruit (usually consumed raw)
- Fresh Cut Vegetables (usually consumed raw)
- Vegetables in Oil
- Unpasteurised Juice

# Industry Guide to Developing a Food Safety Program for High Priority Plant Products

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### **The Use of NSW Food Authority Assistance Materials**

The NSW Food Authority “General Guidelines for the Development and Implementation of a Food Safety Program”, “Food Safety Program Template” and “Industry Guides” are guidance documents only. NSW Food Authority disclaims any liability for any loss or injury directly or indirectly sustained by any person as a result of reliance upon these documents. **Businesses must not assume that these guidance documents cover all food safety hazards within their business. If using these documents to develop your Food Safety Program then you must adapt these to fit your business, products, and market requirements, and to ensure that all potential food safety hazards are identified and controlled.** You are advised to seek independent legal advice in relation to any query you may have regarding the legal obligations imposed under the relevant Food Safety Scheme Regulation.

## Introduction

This Industry Guide has been prepared by the NSW Food Authority in order to assist businesses in the development and implementation of a food safety program for high priority plant products which include:

- Seed Sprouts;
- Fresh Cut Fruit (usually consumed raw);
- Fresh Cut Vegetables (usually consumed raw);
- Vegetables in oil; and
- Unpasteurised Juice

These documents are based on the Hazard Analysis and Critical Control Point (HACCP) system as outlined by Codex Alimentarius Commission, which satisfies the requirements of “Standard 3.2.1 Food Safety Programs” of the Food Standards Code (FSC).

This Industry Guide aims to:

- Provide you with some additional information for developing a food safety program for plant products;
- Provide you with some basic food safety information on plant products, in particular, provide examples for the production of common food processes;
- Help you understand some of the hazards associated with plant products and how to control them; and
- Assist you in developing your own food safety program.

***It is important to note that the Industry Guide should be used and read in conjunction with the NSW Food Authority’s “General Guidelines for Developing and Implementing a Food Safety Program” and the “Food Safety Program Template”. Additional copies of these documents can be located on the NSW Food Authority website: [www.foodauthority.nsw.gov.au](http://www.foodauthority.nsw.gov.au)***

This Industry Guide contains the following sections and follows the format of the “General Guidelines for Developing and Implementing a Food Safety Program” and the “Food Safety Program Template”.

- Scope and Purpose;
- Product Description and Intended Use;
- Process Flow Diagram;
- Hazard Analysis;
- Identifying Critical Control Points;
- Hazard Audit Tables;
- Support Programs; and
- Verification and Validation

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Even if you already have an existing food safety program, the “General Guidelines for Developing and Implementing a Food Safety Program” should still be used as a guide to ensure that you cover all the sections required.

***NOTE: This Industry Guide consists of examples only and may not cover all the processes and activities within your production process. Consequently, other hazards, process steps must be analysed and covered by your business which has not been identified here in the Industry Guide.***

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## Scope and Purpose

Refer to **Section 2.2** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

The scope is a statement outlining the products and processes covered by the Food Safety Program and the parts of the operations it covers (from start to the end point).

The purpose of the food safety program should also be defined. The purpose is a statement of the reason the program has been implemented.

An example of a scope and purpose below:

**Scope:**

*This Food Safety Program covers all activities, procedures, hygienic controls used in the receipt, processing, storage and transport of fresh cut fruits and vegetables.*

**Purpose:**

*The purpose of this Food Safety Program is to minimise the risk of hazards during the handling and processing of the food which is in the company's control, ensuring that the products meet regulatory requirements of the NSW Food Authority, Food Standards Code and the Food Act 2003.*

## Product Description and Intended Use

Refer to **Section 2.3** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

The product description and intended use should list every product you make and should include:

- Product name – name used on the product
- Ingredients used
- Form in which the product is sold (eg. fresh/frozen)
- Type of primary and secondary packaging (eg. primary: packaging in contact with product; secondary: outer pack)
- Preservation methods used (if any)
- Shelf life of product
- Storage and Transport conditions required for the product
- Labelling (if required – eg. allergen declaration)
- The intended use by the consumer (eg. ready-to-eat or requires further cooking)
- The consumers of the product (eg. General population or specific group).

### An example of a Product Description and Intended Use for Seed Sprouts – Mung Beans:

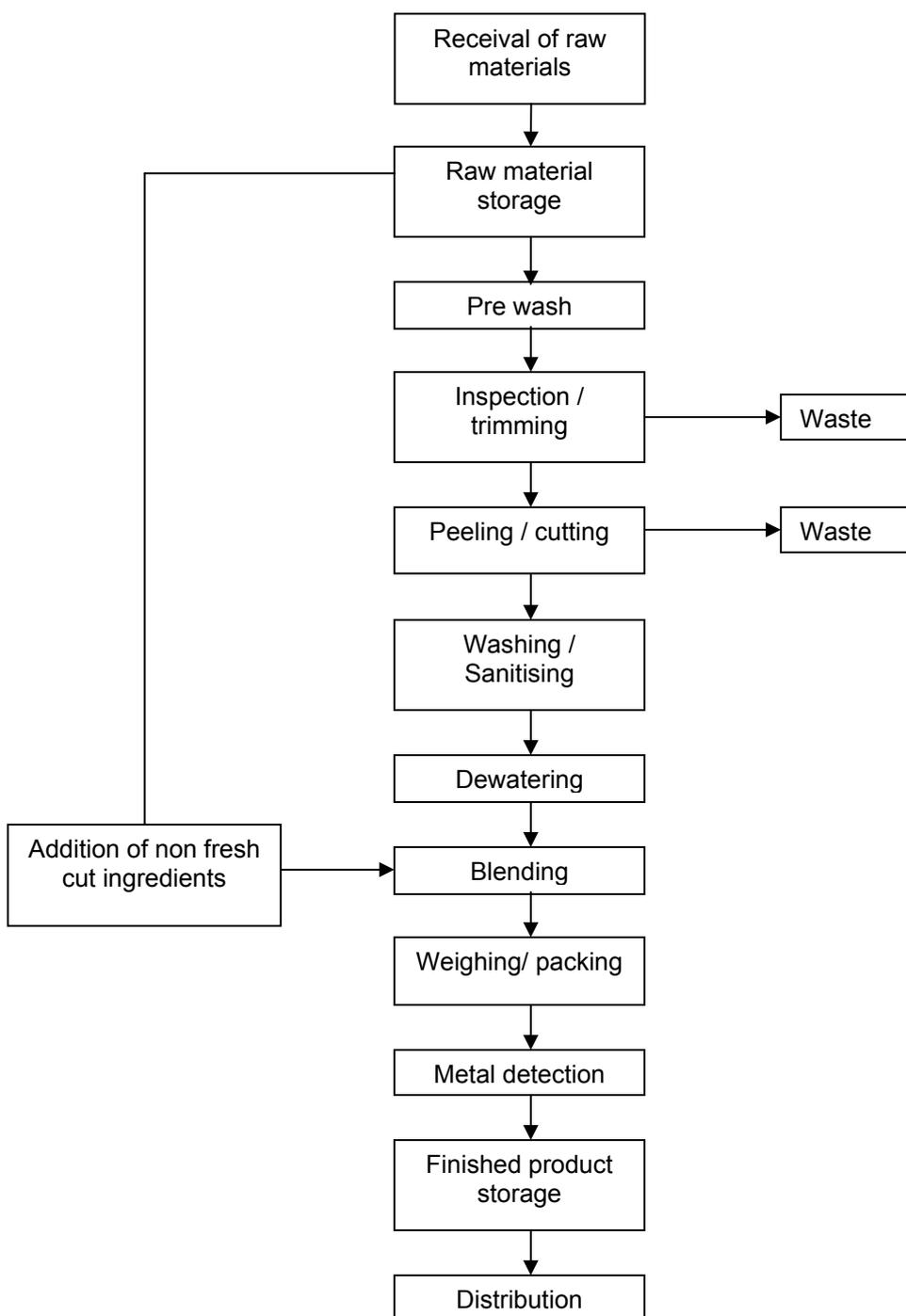
<b>Product Name</b>	Mung Beans
<b>Ingredients Used</b>	Mung Beans
<b>Form</b>	Fresh
<b>Packaging</b>	Pre-packed retail packs or bulk food service packs
<b>Preservation Methods</b>	Nil
<b>Shelf Life of Product</b>	14 days
<b>Storage and Transport</b>	Chilled product: 5°C or less
<b>Labelling</b>	In compliance with Part 1.2: Labelling of the Food Standards Code.
<b>Intended Use</b>	May or may not be cooked prior to consumption.
<b>Intended Consumer</b>	Intended for General consumption

## Process Flow Diagram

Refer to **Section 2.4** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

For each type of process you need to draw a process flow diagram showing the steps involved in producing your product. It should cover the scope of the program. For most businesses this will be from receipt of raw materials through to distribution of finished product.

### An example of a Flow Process Diagram for Fresh Cut Vegetables:



## Hazard Analysis

Refer to **Section 2.5** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

For each step mentioned in the process flow diagram you need to assess the hazards associated with that step. Some of the questions which need to be asked include:

- Can microbial, chemical or physical hazards contaminate the food at this step? – contamination can come from:
  - People handling the food
  - Equipment and utensils
  - Any added ingredients (eg. salt, water, processing chemicals)
- Can microorganisms grow at this step? – this could occur if the food is left unrefrigerated (eg. >5°C) for long periods.
- Can the raw material be already contaminated? – This should be asked of all raw materials being used in the production of plant products. It can be controlled by ensuring that you purchase all products from reputable companies and implement a Supplier Approval Program.

Listed in Tables 1-4 are some example hazards you may find applicable to your operation. **These are examples only and should be used for guidance only. There may be many more not identified here.**

- Table 1: Examples of Potential hazards for Seed Sprouts;
- Table 2: Examples of Potential hazards for Fresh Cut Fruits and Vegetables;
- Table 3: Examples of Potential hazards for Vegetables in Oil; and
- Table 4: Examples of Potential hazards for Unpasteurised Juice

## Identifying Critical Control Points

Refer to **Section 2.5** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

Next you will need to assess each hazard at each step and determine if a Critical Control Point (CCP) is required. Generally CCP's are required where control is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

***You now need to complete Table 2.5 of the Food Safety Template for each hazard identified. See Table 5 of this document for a worked example.***

The CCP Decision Tree can be found in the General Guidelines Figure 1 in Section 2.5.1 and should be used to assist with identifying a Critical Control Point.

In some instances, the CCP Decision Tree will identify that hazard steps are not CCP's, but are simply control points (eg. points where control is necessary but not critical to ensure food safety). As such, these hazards are managed through the use of Support Programs (SP).

***Refer to Table 6 and 7 of this document for worked examples. If a support program is identified a formal documented procedure will be required. Refer to Section 3: Support Programs of the General Guidelines for more information.***

Some typical CCP's of plant products include:

- Receiving temperatures of perishable raw materials
- Pasteurisation time & temperature requirements
- Sanitiser strength used in the washing of RTE vegetables
- Storage and transportation temperatures of finished product that is not shelf-stable.

**Table 1: Examples of potential hazards for Seed Sprouts**

<b>Process Step</b>	<b>What is the potential food safety problem?</b>
<b>Seed receipt and storage</b>	Microbiological contamination from seed. Residues of field chemicals on seed.
<b>Wash/Sanitise seed</b>	Microbiological survival is likely to occur if this process is not well designed or controlled. There is also the risk of chemical contamination.
<b>Soak seed</b>	Microbiological growth is likely to occur if this process is not well controlled. There is also a risk of chemical or physical contamination.
<b>Water</b>	Chemical contamination (Introduction of root inhibitors and growth hormones). Microbiological contamination and growth.
<b>Lay seed in growing bed</b>	Microbiological contamination and/or growth can occur at this stage, encouraged by the time in and temperature of the growing environment. There is also a risk of chemical or physical contamination.
<b>Harvest</b>	Microbiological contamination and/or growth can occur at this stage. There is also a risk of chemical or physical contamination.
<b>Wash</b>	Microbiological growth is likely to occur if this process is not well designed/controlled. There is also the risk of chemical contamination.
<b>Drain</b>	No food safety problems identified at this step.
<b>Packaging materials</b>	Microbiological or physical contaminants can be brought in on packaging materials.
<b>Packing</b>	Microbial contamination from product handling, chemical contamination from cleaning chemicals or physical contamination from equipment and staff.
<b>Metal detector</b>	Physical (metal) contamination, from the production or processing environment if the metal detector is not functioning adequately.
<b>Finished product storage</b>	Growth of potentially harmful organisms if the finished product is not under temperature control after packaging.
<b>Distribution</b>	Growth of potentially harmful organisms if the product is not chilled during distribution.

**Table 2: Examples of potential hazards for Fresh Cut Fruits and Vegetables**

<b>Process Step</b>	<b>What is the potential food safety problem?</b>
<b>Receival of all food and packaging materials</b>	Microbiological contamination can be brought in on raw or packaging materials. Residues of field chemicals on the fruit or vegetable.
<b>Raw product storage</b>	Microbiological or foreign object contamination can result from an unclean storage environment. Opportunity for continued growth of existing microbiological contaminants.
<b>Prewash</b>	Growth of Microbiological contaminants during initial wash step. There is also the risk of chemical contamination, from the sanitiser.
<b>Inspection/ trimming</b>	Microbiological contamination and/or growth can occur with poor process controls. There is also a risk of chemical or physical contamination at this process step.
<b>Peeling/ cutting</b>	Microbiological contamination may occur if this process is not well controlled. Risk of chemical or physical contamination at this process step.
<b>Washing/ sanitising</b>	Microbiological growth is likely to occur if this process is not well designed/controlled. There is also the risk of chemical contamination.
<b>Dewatering</b>	Microbiological contamination and/or growth can occur at this stage. There is also a risk of chemical or physical contamination.
<b>Storage/ Addition of ingredients</b>	Ingredients may include pre-prepared fresh cut products or other loose/packaged food products. Microbiological or physical contamination can occur at this step.
<b>Blending</b>	Microbiological growth is likely to occur if the product is not chilled to the correct temperature. There may also be a risk of microbiological contamination
<b>Weighing/ packing</b>	Microbial contamination from product handling, chemical contamination from cleaning chemicals or physical contamination from equipment and staff
<b>Metal detection</b>	Physical (metal) contamination, from the production or processing environment if the metal detector is not functioning adequately.
<b>Finished product storage</b>	Growth of potentially harmful organisms if, the finished product is not stored under temperature control after packaging.
<b>Distribution</b>	Growth of potentially harmful organisms if the product is not chilled during distribution.

**Table 3: Examples of potential hazards for Vegetables in Oil**

Process Step	What is the potential food safety problem?
<b>Receival of all food packaging materials</b>	Microbiological contamination can be brought in on raw or packaging materials. Residues of field chemicals on the fruit or vegetable.
<b>Raw product storage</b>	Microbiological or physical contamination can result from an unclean storage environment. There may also be the opportunity for continued growth of existing microbiological contaminants.
<b>Wash/ sanitise</b>	Microbiological growth is likely to occur if this process is not well controlled. There is also a risk of chemical contamination.
<b>Prepare/ process (peel, dry, cook)</b>	Microbiological growth is likely to occur if this process is not well controlled. Microbiological growth can be controlled if the water activity of the product is controlled through drying. There is also a risk of chemical or physical contamination at this process step.
<b>Storage/ addition of ingredients</b>	Ingredients may include herbs, spices, or other dried vegetables. Microbiological or physical contamination can occur when ingredients are mixed, or batched, ready for addition.
<b>Acidify</b>	This step is designed to reduce or eliminate the likelihood of <i>Clostridium botulinum</i> survival or growth. Correct and uniform acidification is necessary to ensure this. ph must be <4.6
<b>Heat/ cook in oil</b>	Microbiological growth is likely to occur if this process is not well controlled.
<b>Addition of Oil</b>	Impure oil may cause microbiological or chemical contamination.
<b>Hot/cold fill, immerse in oil</b>	The filling process can expose the product to microbiological growth (if the product is not filled correctly or fully immersed), chemical contamination (cleaning chemicals); or physical contamination (open bottles).
<b>Pasteurise</b>	Depending on the conditions of pasteurisation, this may not eliminate all microorganisms. Spores and toxins may not be destroyed also. This is an optional step.
<b>Ambient finished product storage</b>	The product should only be stored at ambient temperature if previously pasteurised or the water activity of the product is reduced to a level not supporting the growth of pathogens. Duration of storage must be sufficient to ensure pathogen die off. Microbiological growth may still occur if the product is incorrectly sealed, or incorrectly pasteurised.
<b>Ambient distribution</b>	The product should only be stored at ambient temperature if previously pasteurised or the water activity is reduced to a level not supporting the growth of pathogens. Microbiological growth may still occur if the product is incorrectly sealed, or incorrectly pasteurised.
<b>Chilled finished product storage</b>	After packaging, unpasteurised product with water activity high enough to support growth of pathogens must be stored under temperature control to minimise the growth of potentially harmful organisms.
<b>Chilled distribution</b>	Unpasteurised product with water activity high enough to support growth of pathogens must also be chilled during distribution to minimise the growth of potentially harmful organisms.

**Table 4: Examples of potential hazards for Unpasteurised Juice**

<b>Process Step</b>	<b>What is the potential food safety problem?</b>
<b>Receival of all food and packaging materials</b>	Microbiological contamination can be brought in on raw or packaging materials. Residues of field chemicals on the fruit or vegetable.
<b>Raw product storage</b>	Microbiological or physical contamination can result from an unclean storage environment. There may also be the opportunity for continued growth of existing microbiological contaminants.
<b>Inspection Conveyor</b>	Microbiological contamination from product handling, chemical contamination from cleaning chemicals, or foreign objects from open surfaces or staff.
<b>Wash/ scrub/ sanitise</b>	Microbiological growth is likely to occur if this process is not well controlled. There is also a risk of chemical or physical contamination.
<b>Extractor/ juicer</b>	Microbiological, chemical, or foreign object contamination can result from an unclean and/or poorly maintained extractor.
<b>Storage tank/ Chiller</b>	Microbiological growth is likely to occur if the juice is not chilled to the correct temperature. There is also a risk of chemical or physical contamination.
<b>Storage and addition of ingredients</b>	Ingredients may include pulp or puree of other fruits. Microbiological or physical contamination can occur when ingredients are mixed, or batched, ready for addition to juice.
<b>Batching Tanks</b>	Microbiological, chemical, or physical contamination can occur when ingredients are batched, ready for addition to juice.
<b>In-line screen or filter</b>	The in-line screen is critical to entrap any physical contaminant (eg metal, wood). Foreign objects will not be effectively removed if this is not functioning adequately. There is also a potential for microbiological or chemical contamination.
<b>Fill</b>	The filling process can expose the juice to microbiological contamination (dirty filler), chemical contamination (cleaning chemicals); or physical contamination (open bottles).
<b>Finished product storage</b>	Growth of potentially harmful organisms, if the finished product is not stored under temperature control after packaging.
<b>Distribution</b>	Growth of potentially harmful organisms if the product is not chilled during distribution.

An example of a Hazard Analysis is given below using the CCP decision tree to identify Critical Control Points and Supporting Programs within a process.

**Refer to Figure 1 in Section 2.5.1: General Guidelines for the Development and Implementation of a Food Safety Program and work through the questions of the CCP Decision Tree.**

**Table 5: Hazard Analysis: Outcome – Critical Control Point**

Process Step	Hazard	Control Measure	Q1	Q2	Q3	Q4	Q5	CCP/SP
Finished product storage	Microbiological contamination	Storage temperature	Y	Y	Y			CCP

**Table 6: Hazard Analysis: Outcome – Support Program**

Process Step	Hazard	Control Measure	Q1	Q2	Q3	Q4	Q5	CCP/SP
Receival of Raw Materials	Microbiological contamination	Approved Supplier Program	Y	Y	N	Y	Y	SP

**Table 7: Hazard Analysis: Outcome – Support Program**

Process Step	Hazard	Control Measure	Q1	Q2	Q3	Q4	Q5	CCP/SP
Wash/Sanitise equipment	Microbiological and Physical contamination	Cleaning and Sanitation Program	Y	Y	Y			SP

From Table 7: Hazard Analysis: Outcome – Support Program, using the CCP decision tree, this step has been identified as a Critical Control Point (CCP). BUT, since the hazard will be effectively controlled if an effective implemented Support Program has been put in place (Cleaning and Sanitation Program), this step is not identified as a CCP, but is designated as being controlled by a Support Program.

## Hazard Audit Table

Refer to **Section 2.6** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

The Hazard Audit Table is used to document how you will control your Critical Control Points. For each CCP you will need to document:

- What is the critical limit;
- Monitoring of CCP's;
  - What you need to monitor;
  - How will you monitor the CCP;
  - When (frequency) you will monitor the CCP; and
  - Who will monitor the CCP;
- What Corrective Action to take if the critical limit is exceeded;
- How you will record your monitoring results – Note: all monitoring results of CCP's must be recorded.

Process Step	Hazard	Control Measure	Monitoring	Critical Limits	Corrective Actions	Records
Raw material storage	Microbiological growth	Storage temperature	<b>WHAT:</b> Storage temperature <b>HOW:</b> Temperature gauge <b>WHEN:</b> Daily <b>WHO:</b> Manager or delegated employee	$\leq 5^{\circ}\text{C}$	If temperature rises above $5^{\circ}\text{C}$ call refrigeration service. If above $7^{\circ}\text{C}$ for more than 2 hours arrange alternative storage or discard product.	Temperature records – Coolroom Monitoring Form

Process Step	Hazard	Control Measure	Monitoring	Critical Limits	Corrective Actions	Records
Product Wash water used for sanitising	Microbiological contamination	Use of sanitiser in wash water	<b>WHAT:</b> Level of sanitiser in wash water <b>HOW:</b> Residual sanitiser testing <b>WHEN:</b> 3 times daily <b>WHO:</b> Manager or delegated employee	Varies depending upon sanitiser	If sanitiser level is below the effective level, follow manufacturers recommended method for topping up the level of sanitiser.	Production records - Sanitiser Monitoring Form

Process Step	Hazard	Control Measure	Monitoring	Critical Limits	Corrective Actions	Records
Acidify	Microbiological contamination	pH level of the product	<b>WHAT:</b> Acidity of product <b>HOW:</b> pH meter/indicator <b>WHEN:</b> Every batch <b>WHO:</b> Manager or delegated employee	$\text{pH} < 4.6$	If pH limit not met, either rework or discard	Production records – pH Monitoring Forms

## 1 Critical Limits

Refer to **Section 2.6.1** of the General Guidelines for the Development and Implementation of a Food Safety Program and the Food Safety Program Template

All critical limits must be based on either:

- Information from Regulatory Standards (eg. Food Standards Code);
- Published scientific information;
- Validated results from credible scientific programs; or
- Suppliers recommendations.

Any information supporting your decision to use a critical limit must be kept with your food safety program and manual to assist the auditor in assessing this information.

Typical critical limits for plant products are shown below:

- Table 8: Seed Sprouts
- Table 9: Fresh Cut Fruits & Vegetables
- Table 10: Vegetables in Oil
- Table 11: Unpasteurised Juices

**Table 8: Typical critical Limits for Seed Sprouts**

Hazard/Control measure	Critical Limit	Reference/Justification
Microbiological contamination due to insufficient sanitiser concentration in wash water used for soaking seeds and washing of sprouts.	Concentration based on suppliers recommendation; <b>OR</b> Concentration based on the company's validation study to determine effectiveness of the concentration used.	Supplier's recommendation based on the effectiveness of chemicals used.
Temperature control during storage and distribution of product.	≤ 5°C	Australia and New Zealand Food Standards Code (FSANZ) Standard 3.2.2 Food Safety Practices and General Requirements.

**Table 9: Typical critical limits for Fresh Cut Fruits and Vegetables**

Hazard/Control measure	Critical Limit	Reference/Justification
Temperature control during receipt, storage and distribution of product.	≤ 5°C	Australia and New Zealand Food Standards Code (FSANZ) Standard 3.2.2 Food Safety Practices and General Requirements.
Microbiological contamination due to insufficient sanitiser concentration in wash water.	Concentration based on suppliers recommendation; <b>OR</b> Concentration based on the company's validation study to determine effectiveness of the concentration used	Supplier's recommendation based on the effectiveness of chemicals used.
Physical contamination due to foreign objects - Metal Detection	Nil metal detected	Metal detector supplier recommendations based on the effectiveness to the limits of sensitivity for particular products.

**Table 10: Typical critical Limits for Vegetables in Oil**

Hazard/Control measure	Critical Limit	Reference/Justification
Temperature control during receipt, storage and distribution of vegetables in oil	≤ 5°C	Australia and New Zealand Food Standards Code (FSANZ) Standard 3.2.2 Food Safety Practices and General Requirements.
Microbiological contamination in the preparation/processing due to water activity	<0.85	Verified by AIFST – Food Borne Microorganisms of Public Health Significance; Chapter 14: <i>Clostridium botulinum</i>
Acidification – Microbiological contamination due to pH level of the product	pH <4.6	Australia and New Zealand Food Standards Code (FSANZ) Standard 2.3.1 Fruit and Vegetables

**Table 11: Typical critical Limits for Unpasteurised Juices**

Hazard/Control measure	Critical Limit	Reference/Justification
Temperature control during receipt, storage and distribution of unpasteurised juices	≤ 5°C	Australia and New Zealand Food Standards Code (FSANZ) Standard 3.2.2 Food Safety Practices and General Requirements.
Microbiological contamination due to insufficient sanitiser concentration in wash water.	Concentration based on suppliers recommendation; <b>OR</b> Concentration based on the company's validation study to determine effectiveness of the concentration used	Supplier's recommendation based on the effectiveness of chemicals used.
In line screen/filter	Nil damage to the screen/filter	Foreign objects can potentially become a physical hazard.

## 2 Monitoring of Critical Limits

For each of the CCPs you will need to define:

- What you are monitoring? (What?)
- How you are monitoring it? (How?)
- When or How often you are monitoring it? (When?)
- Who is responsible for the monitoring? (Who?)

## 3 Corrective Action

For each CCP you will need to state, what you would do if any of your CCPs are not met. This would include:

- What you would do with any product while the CCP was not met;
- What you would do to bring the step back into control

Corrective Actions must also be recorded.

## 4 Records

Here you should state what records you keep of your daily monitoring and your monitoring of corrective actions.

## Support Programs

This section provides you with some information on supporting programs which is relevant to the five high priority plant product industries.

### Maintenance Program

Refer to **Section 3.1** of the General Guidelines for the Development and Implementation of a Food Safety Program

Premises, Equipment, and Transport vehicles should be designed, constructed and maintained in a way that will minimise the chance of food becoming contaminated. Refer to the “Code of Practice for the Transport of Primary Produce and Seafood”.

Food Transport vehicles must comply with the “Code of Practice for the Transport of Primary Produce and Seafood” developed by the NSW Food Authority.

### Supplier Approval Program

Refer to **Section 3.2** of the General Guidelines for the Development and Implementation of a Food Safety Program

All supplies (eg raw materials, packaging) used in plant products businesses must be sourced from an approved supplier.

**Seed Sprouts** – Seed or bean sprout producers shall require their seed suppliers meet **one** of the following requirements:

1. Have a fully implemented HACCP based Food Safety Program in place; OR
2. Have demonstrated consistent supply of seeds which are free from pathogens as verified by regular testing of raw material as per Section 4 of the Plant Product Manual; OR
3. Have provided the business with adequately documented evidence that seeds supplied have been produced with strict adherence to Good Agricultural Practices and verified by regular testing of seeds supplied as per Section 4 of the Plant Product Manual; OR
4. For sprout producers using a 20,000ppm or stronger solution of Calcium hypochlorite (**or another sanitiser solution of equivalent effectiveness**) for pre-soaking seeds before germination, require seeds supplied be accompanied by document evidence that the batch is free from pathogens (eg. Certificate of Analysis)

### Calibration Program

Refer to **Section 3.9** of the General Guidelines for the Development and Implementation of a Food Safety Program

All equipment used to conduct food safety system checks must be calibrated to ensure accuracy and precision of the readings taken. Consideration is required in particular for the following in plant product industries:

- thermometers;
- pH meters;
- Water activity meters;
- Pasteurisation flow meters

## Validation and Verification

Microbiological testing is required to verify that practices and procedures in place are effective and are achieving safe food.

Listed below is a table of the minimum testing requirements required for the five high priority plant product industries.

### Seed Sprouts - Water Testing requirements

Product	Testing Frequency	Tests	Required Level
Recycled or spent irrigation water 48hrs after seed laid	Fortnightly	<i>Salmonella</i>	Not Detected in 25mL

### Fresh Cut Fruit and Vegetables – Product Testing requirements

Product	Testing Frequency	Tests	Required Level
Fresh Cut Fruit	Fortnightly	<i>Listeria monocytogenes</i>	Not Detected in 25g
		<i>Salmonella</i>	Not Detected in 25g
Fresh Cut Vegetable	Fortnightly	<i>Listeria monocytogenes</i>	Not Detected in 25g
		<i>Salmonella</i>	Not Detected in 25g

### Vegetables in Oil – Product Testing requirements

Product	Testing Frequency	Tests	Required Level
Vegetable pieces	Every batch	pH level	<4.6

### Unpasteurised Juice – Product Testing requirements

Product	Testing Frequency	Tests	Required Level
Unpasteurised Juice	Fortnightly	<i>Salmonella</i>	Not Detected in 25mL

All tests are to be carried out using Australian Standard methods or equivalent and performed in a NATA accredited laboratory (a list of NATA accredited laboratories can be found at [www.nata.asn.au](http://www.nata.asn.au)).

If any results do not comply with these standards, the NSW Food Authority must be advised within 24 hours of receiving the result by contacting (02) 9741 4777.