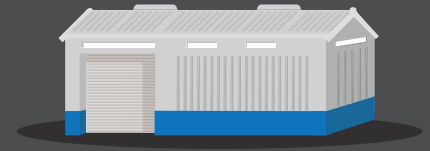


Packhouse & Coolstore

Code of Practice



Refer to the NZGAP Scheme rules for guidance of the verification requirements for Growers and Postharvest operators. Good Agricultural Practices (GAP) and HACCP principles are used to address critical operations for food safety, environment (e.g. discharge of water), staff and quality.

12.1 MANAGEMENT AND QUALITY SYSTEM

Management should have a written Quality Statement. This statement should include the quality goals and aims for the company, and the commitment required to achieve these. It should be displayed in the appropriate places. Management should ensure that all stages of the production process are controlled to meet the customer's needs.

A written plan should be prepared to identify the critical operations required to get the product to the customer, i.e. a simple flow chart of the production process. A critical operation is defined as any operation that can compromise the quality or safety of the product.

The Quality Statement is one simple way to involve your staff in your business to help ensure they buy in to what you desire for your business. This helps demonstrate commitment and once done, remains a foundation for your business.

A designated person should have overall management responsibility of the operation.

Why should the designated person have overall management responsibility? The manager is the person who undertakes the overall risk assessment of the operation and therefore, has the role of dictating how GAP and HACCP processes operate. Delegation to others can only happen if there is the same level of overall risk assessment responsibility.

Job descriptions are written for all key positions and staff are aware of their tasks and responsibilities. Job descriptions may be task related or they may apply to a staff member. These should include areas of responsibility and lines of control to ensure this programme is implemented and maintained.

12.2 PRODUCT ARRIVAL

Temperatures of the produce should be taken on arrival.

The Quality Controller should evaluate the product prior to entry and advise management of any quality problems, pests or diseases that may affect the out turn of the crop from the packhouse.

12.3 DOCUMENTATION SPECIFICATIONS

The customer's product specifications are documented including the customer's delivery requirements (e.g. time of delivery and arrival temperature).

If customer specifications are not available, the grade specifications set down by the respective industry product groups should be used. If industry grade standards don't exist, industry groups should work toward setting and adopting a standard.

Defect or out of grade charts, colour charts, pest and disease charts and, where applicable, spray diaries should be available prior to commencing packing.

If grading by colour, staff should be tested for colour blindness, however a task by task practical assessment of the graders ability to grade may suffice. Also refer to Section 12.10 for Quality Control.

12.4 PURCHASE OF GOODS AND SERVICES

Procedures are in place to ensure that purchased items meet agreed specifications. Procedures and instructions to suppliers should define packaging, transport, handling, receipt and processing arrangements as agreed with the supplier. Goods are checked on arrival for correct quantities, identity, suitability and damage caused in transit.

If goods or services purchased do not meet the agreed specifications they should be separated and action taken. Records are kept for the purchasing of goods and services. The results of evaluations of suppliers and follow-up actions are recorded.

Why is it important for goods and services to meet agreed specifications? Apart from the hassle it can cause your business, poor products or inadequate services may result in food safety hazards being present in or on your produce. For instance, dirty or infested packaging, incorrect temperatures or storage combinations during transportation or machinery that may break down that could result in physical contamination of your produce. Follow-up actions are meant to prevent the non-conformance happening again.

Where possible, inputs of material and services are purchased from Approved Suppliers. The GLOBALG.A.P. Implementation Guidelines provides information on fertiliser and agrichemical inputs and contracting services. The Transport Code of Practice provides information on Approved Suppliers of packaging. Section I provides information on Approved Suppliers of transport services.

12.5 STAFF

Management have a documented sickness policy in place to cover employees and visitors.

A sickness policy should cover those people directly involved in the production and preparation of fresh produce and those people who are visiting packhouses. A sickness policy will be an important part of managing food safety. It should complement other policies such as training (section H5), personal hygiene (See also GLOBALG.A.P. Implementation Guidelines Section 12, CP 12.2 – 12.6) and the cleaning programme (See also GLOBALG.A.P. Implementation Guidelines Section 12, CP 12.3). A sickness policy should also cover screening requirements for new employees, clarification of the sickness that needs reporting, who the sickness should be reported to and the documented actions taken.

Management ensure forklift drivers operating within the packhouse or coolstore facility are adequately trained and competent to operate the forklift. The training requirements stated in GLOBALG.A.P. Implementation Guidelines Section 8, control point 8.11 are met.

Individuals that are directly supervising and instructing forklift drivers have completed an operators course run by an OSH approved trainer.

12.6 COMPLAINTS AND CORRECTIVE ACTIONS

Management has a documented system for customer complaints, including recording the complaint, the corrective action and the assessment to ensure the corrective action has been effective.

Records include:

- Who made the complaint
- The date of the complaint
- What was the complaint
- What action was taken
- Who took the complaint and signed it off to prevent reoccurrence

Management shall investigate complaints immediately and take action to fix the problem and prevent it happening again. A complaint may mean the product is recalled (refer to Section 3 of the implementation guidelines). Management actively encourage staff to bring any problems which may affect the quality or the safety of the product to their attention.

All problems should be treated with the importance that relates to the effect the problem has on the quality or the safety of product.

12.7 PRODUCT IDENTIFICATION & TRACEABILITY

Each individual product line is able to be identified in a way that clearly differentiates it. Product from non-Approved Suppliers is segregated and not packed or sold as originating from Approved Suppliers. This may include product identified with the date of harvest to ensure the correct rotation of product through the packhouse for grading, packing and sale.

Management have a documented system to ensure that product identification and traceability is maintained according to customer and regulatory requirements. Each individual product line is able to be identified in a way that clearly differentiates it.

The type and method of identification should suit the product and the packhouse operation. For instance, if you are packing a crop that is harvested by block, then the identification method or traceability system should be able to establish the source of the product.

Each line is able to be tracked and traced throughout the packing and produce distribution chain, including the post-harvest and packing inputs required for that line.

Tracking and tracing means being able to identify produce forwards and backwards through the growing and produce distribution chain.

An accurate inventory of stored product shall be kept, which includes being able to identify product, trace and if required, segregate product. There shall be clear documented procedures and records for the control of non-conforming product including rejection or re-grading.

Packhouses packing and selling produce as approved under New Zealand GAP must be able to demonstrate that produce is being sourced from an Approved Supplier.

12.8 PRODUCT NON-COMPLIANCE

Each line is able to be segregated if required e.g. product which has been packed that does not meet the customer and grade specifications. There are clear documented procedures and records for the control of non-conforming product including rejection or re-grading.

12.9 RECALL

A documented system is in place to recall any product. The recall system is tested and its effectiveness determined and follow-up actions documented.

The recall system can include a process for withdrawal and destruction without the produce actually being returned. If the recall system can identify, trace and stop all affected products, the outcome is the same. The elements of the recall system largely remain the same, i.e. traceability, responsibilities, contacts, records and assessment of the effectiveness of the recall.

12.9.1 GUIDELINES FOR THE CONDUCT OF A RECALL ¹

The following activities are suggested as guidelines to the Recall Co-ordinator for the implementation of a Product Recall, upon the receipt of notification of a significant complaint, or of the existence of a potentially faulty product:

- Consider the extent of the problem and make a preliminary decision as to the implications to public health and/or the company reputation.
- Decide whether a recall may be necessary, or whether to handle the problem through normal operational procedures.
- Should it be likely that a recall will be necessary, convene the Product Recall Co-ordinating Committee. The Committee collates and evaluates all information immediately available on the extent and nature of the problem, and decides the Recall Classification.
- Notify management and functional areas of the situation (manufacturers should prepare an appropriate list of inclusion in their plan).
- Institute a log of events and actions taken, to be maintained until all aspects of the recall are finalised.

Ensure that original manifests, vouchers, notices, reports and papers are retained for later (official, etc.) scrutiny, if this becomes necessary or audit.

Immediate actions to be taken to:

- Establish the amount of the faulty stock produced;
- Locate the product and commence recall, notifying customers, wholesalers and retailers;
- Identify the supplier of ingredients (etc); discontinue distribution of the product;
- Continue investigation into the nature, extent, cause and remedy of the problem;
- Consider the need to discontinue production of the product, and issue necessary instructions;
- Where necessary, notify Health Protection Officers or NZ Food Safety Authority;
- Keep returned stock in a quarantine area and maintain a tally of that stock.
- Notify the media and the public of the situation, as appropriate to the circumstances.
- Notify company staff of the situation.
- Prepare further information as it becomes available for all interested parties.
- Determine the necessity for storage, isolation or disposal of the affected stock and/or ingredients.
- Maintain periodical checks of the effectiveness of the recall.

12.10 ASSESSMENT OF THE EFFECTIVENESS OF A PRODUCT RECALL

To determine if a Product Recall has been carried out successfully, the following would have to be considered by the Product Recall Committee:

- The speed of the recall action taken.
- The time taken to retrieve the affected product from the market place.
- The accuracy of the recording of the amount of product and its location in the distribution system and in market place.
- The accuracy of identification of the faulty product in the market place.
- The scope and effectiveness of the notification in the recovery of the faulty product and in minimising adverse publicity.

12.11 INTERNAL ASSESSMENTS

Management complete an internal self-assessment of their operation at least once every 12 months. This may be combined with the self-assessment required as part the ongoing requirement of this programme, from year 1.

Management should be aware of the risks to product quality and food safety, inherent in their operation and ensure an ongoing internal assessment of those risks is carried out. Appropriate corrective actions shall be taken on the results of the internal assessment to ensure the system is effective and product quality and food safety is maintained.

12.10 PRODUCT QUALITY CONTROL

Produce arriving at a packhouse, should be graded in the field as close as practical to the packhouse specifications where required or agreed.

Each individual product line is able to be identified in a way that clearly differentiates it. Product from non-Approved Suppliers is segregated and not packed or sold as originating from Approved Suppliers

A documented quality control system operates in the packhouse.

The quality control system includes as a minimum:

- Identification of product line
- Customer product specification
- Product examination
- Sample size
- Packaging and labelling
- Actions taken

If customer specifications are not available, either the grower can produce their own specifications or use the Turners and Growers specifications that are available on their website.

The Packhouse has a Quality Controller. If grading by colour, staff should be tested for colour blindness, however a task by task practical assessment of the graders ability to grade may suffice.

The Quality Controller monitors the quality of packed produce, by inspecting a representative sample of the packed produce and recording their actions.

Different grades are clearly identified and separated from other grades and waste or non-conforming product.

Any equipment and machinery which requires calibration has records kept e.g. weighing equipment, thermometers and chemical dispensers. Calibration is at least annual.

Instead of independent calibration, certified test weights may be used to regularly check the accurate operation of scales. These may be obtained from the main weight scale manufacturers and distributors.

12.12 PRODUCT SAMPLING – MINIMUM SUGGESTED LEVELS

Sampling should reflect the quality of the product, i.e. poorer quality product may require a higher level of sampling from that suggested below.

- a) Leafy Vegetables
(Cabbage, Silverbeet, Lettuce, Celery, Corn, Cauliflower, Herbs, etc.)
Samples should be taken at a minimum of 1 packed unit (or 10 items of produce) per hour during packing, ensuring that a minimum of 1% of the line is sampled.
Product should be sampled from different packers/graders.
Product shall be selected from a range of sizes being packed.
Pallets should be marked every time a sample is taken to ensure that the next sample is taken from product packed after the previous inspection. Each line or part line shall be able to be segregated if required.
- b) Vegetables in trays, loose cartons, bags, bins
(Tomatoes, Capsicums, Beans, Cucumbers, Egg Plant, Courgettes, Asparagus, Onions, Pumpkin etc.) Samples should be taken at a minimum of 1 packed unit (or 10 kg of produce) per hour during packing, ensuring that a minimum of 1% of the line is sampled.
Product should be sampled from different packers / graders.
Product shall be selected from a range of sizes being packed.
Pallets should be marked every time a sample is taken to ensure that the next sample is taken from product packed after the previous inspection. Each line or part line shall be able to be segregated if required.

c) Root Crops

(Potato, Kumara, Carrots, Parsnip, Yam, etc.)

Samples should be taken at 1 bag (or 20 kg) per hour during packing with a minimum of five inspections (100 kg) over each grower's line, ensuring that a minimum of 1% of the line is sampled.

Product should be sampled from different packers/graders.

Product shall be selected from a range of sizes being packed.

Pallets should be marked every time a sample is taken to ensure that the next sample is taken from product packed after the previous inspection. Each line or part line shall be able to be segregated if required.

d) Fruit Crops

Existing export programme or local market grade standard sampling quantities and methods should be adopted. Where there is no export programme or local market grade standard, samples should be taken, ensuring that a minimum of 1% of the line is sampled.

Product should be sampled from different packers/graders. Product shall be selected from a range of sizes being packed.

Pallets should be marked every time a sample is taken to ensure that the next sample is taken from product packed after the previous inspection. Each line or part line shall be able to be segregated if required.

12.13 PRODUCT EXAMINATION

The inspection unit shall be:

- an individual vegetable or fruit e.g. potato, asparagus, apricot
- a bunch of vegetables or fruit e.g. bunched parsley, a natural bunch of grapes

Each unit shall be examined according to quality issues and factors that have been considered as affecting quality. The examination procedure may include:

- Removing each unit from the packaging.
- Examining top and bottom of the unit.
- Slowly rotate the unit examining the sides for decay, firmness, skin, storage and cosmetic defects.
- For leafy vegetables, natural bunches of fruit or where a calyx or other natural attachment may require inspection, gently prise up the outer leaves, fruits or calyx and examine beneath for insects / disease.
- Bunched herbs (e.g. Parsley) may be gently tapped over a table to dislodge any insects.
- Checking the units and packaging are clean; i.e. free of soil, foreign smells or decaying produce that may contribute to contamination and dry especially for root, bulb and tuber crops.
- Checking that units are free of pests, diseases and contamination with toxic substances.
- Checking that the units packed weight correlates with the label specification.
- If appropriate, 5% of the inspection sample should be cut open for assessment.

Any units that do not meet requirements shall be separated from other grades and labelled according to the segregation and identification system in place. Actions taken shall be recorded.

12.14 PRODUCT LABELLING

The decision diagram below describes the requirements (and Joint Food Code Standard references) for labelling under the Joint Food Code. The Joint Food Code of Food Standards Australia New Zealand can be accessed from www.foodstandards.govt.nz.

Where applicable, the labelling complies with the requirements of the Joint Food Code of Food Standards Australia New Zealand.

If not applicable under the Joint Food Code, e.g. loose produce in crates, all produce is identified according to the identification and traceability system in place and the customer specifications. All information on the label or package is legible.

The customer specifications may include product type, grade, weight, pack type and number of items per package.

12.15 STACKING AND PALLETISING

Every package should be handled and stacked in a manner that meets the customer specifications, does not damage the produce and does not compromise staff safety.

Produce should be palletised ready for transport in accordance with the requirements for the transportation of fresh produce described in the Transport Code of Practice which is downloadable the NZGAP website: www.newzealandgap.co.nz

12.16 DISPATCH AND DELIVERY

The vehicles used to transport packed produce cover the product using a fixed form of covering to form an enclosed unit or an approved pallet protector which is insulated and prevents product rub.

Where product is in its final; fit for sale state and containment (i.e. graded, packed and quality controlled, cooled), a fixed form of covering to form an enclosed unit is required, for category 1 and 2.

Transport operators who are contracted to carry produce should, be Approved Supplier.

All documentation accompanying the consignment should be accurately completed in compliance with the requirements for the transportation of fresh produce described in Transport Code of Practice.

If produce is to be held in the storage area awaiting transportation, it should be protected from the elements, weather, birds and animals at a level appropriate for the crop. Packers should present product ready for transportation.

12.17 WATER

Sources of water used in the post-harvest process are evaluated against the decision diagram (H6) below and the results of the evaluation documented.

Water quality data (within 12 months) indicating that the water used in the washing process meets the NZ Drinking Water Standard. (DWSNZ2005). Records are available.

Water quality data (within 12 months) is available from the local authority (Regional Council), or from water tests at the washing equipment intake point, indicating that the water meets the NZ Drinking Water Standard. (DWSNZ2005). Records are available.

Where the risk assessment (H6) identifies a risk associated with water used in the produce handling processes, steps are taken to identify and address the root cause of the contamination. In the meantime, water is sourced from an alternative, safe source. Actions and an assessment of the effectiveness of the actions are documented.

Water testing laboratories are accredited to ISO17025. Laboratory reports include confirmation of the accreditation status of the laboratory.

The frequency of the evaluation should allow for the management of the potential risk, e.g. when the condition of the water source changes. Water quality should be adequate for its intended use. This should include water used for mixing post-harvest treatment agrichemicals, wash water, re-circulated wash water, water and ice used in cooking, cleaning and other operations involving contact with the edible part of the produce.

Water is classified as a significant food safety hazard under this programme. The decision diagram below helps determine whether risks to food safety, through microbial or chemical contamination, from water used in the final steps of the process are significant or not.

Consideration of whether the produce is “ready to eat” or not will influence the evaluation of the potential risk of contamination from the source of water. For example, adequate peeling / removal from the skin, washing or cooking of the produce prior to being eaten will reduce the potential risk of microbial contamination.

Where a risk has been identified, steps are taken to ensure the water quality is made adequate for its intended use, for example:

- alternative sources known to be acceptable for human consumption and fit for purpose,
- appropriate chemical or physical treatment of the water, making it fit for purpose,
- good hygiene practice is required for all steps – replacement of the used water and cleaning of equipment.

Please note: The temperature of the water (especially where contact is prolonged e.g. wash water) may contribute to the absorption of microbes and contaminants into the produce, by osmosis and therefore, the water temperature should be as close to that of the produce as possible (or slightly warmer) to help prevent the absorption.

Where water is recirculated for final product washing, measures are in place to maintain water quality (e.g filtering or chemical treatment) and is water quality routinely monitored (e.g. pH tests)? Records of the treatment and monitoring are kept.

12.17.1 MICROBIAL CONTAMINATION

The Drinking-water Standards for New Zealand (2008) uses *E. coli* as an indicator of the potential presence of pathogenic enteric bacteria, enteric viruses, and pathogenic protozoa. *E. coli* is monitored as an indicator of faecal contamination, and therefore of the potential presence of pathogenic micro-organisms. Their presence is a definite indication of pollution, their absence suggests that pathogenic bacteria and viruses are probably absent also.

The guideline for the Drinking-water Standards for New Zealand (2008), can be downloaded from here: <http://www.health.govt.nz/publication/guidelines-drinking-water-quality-management-new-zealand>

The actual Drinking-water Standards for New Zealand (2008), can be found at: <https://www.health.govt.nz/system/files/documents/publications/drinking-water-standards-2008-jun14.pdf>

12.17.2 CHEMICAL CONTAMINATION

The Drinking-water Standards for New Zealand (2008) includes agrichemical contamination, but generally does not give a level of contamination to measure against. The rationale given in the Standard is that agrichemical contamination is unlikely to occur and there are currently no agreed levels to measure against.

The decision diagram in Appendix 1 G7.2 helps to determine whether there is a presence or absence of agrichemicals in the water. If there is a presence shown by a “spike” significantly above the MAV then a further residue test of the produce to see whether the level exceeds the Maximum Residue Level (MRL) set for the agrichemical, shall be made.’

The Drinking-water Standards for New Zealand 2008 (DWSNZ) quotes:

“Pesticides and other organic determinands with MAVs [maximum acceptable values] have been tabulated together in Table 2.3 of the DWSNZ. Not all of the determinands listed in Table 2.3 were being used in New Zealand at the time the DWSNZ were prepared. They are included to cover the possibility of their use in the future. Others, such as DDT and its isomers and dieldrin, are no longer registered for use in New Zealand. As a result, there are stockpiles of unused pesticides in various parts of the country. These stockpiles, and residues in soil, are a potential contributor of pesticides to source waters of drinking-water supplies, so MAVs for these compounds have been retained. Some groundwaters have been found to contain traces of pesticides that were formerly used in New Zealand but which have been withdrawn from use for some years. Other organic contaminants, such as pentachlorophenol (PCP), may leach to groundwater or surface waters from timber treatment sites and storage areas.

The DWSNZ does not include a MAV for all pesticides used in New Zealand. The use and distribution of these pesticides, together with any new pesticides, will be reviewed for inclusion at a later date. Table A2.2 of the DWSNZ includes pesticides and other organic determinands for which health concerns have been raised but for which no MAV or World Health Organisation guideline value has yet been set.”

12.18 TESTING PRODUCE

Approved suppliers of laboratory testing services shall have a quality assurance system that is accredited to ISO17025.

12.19 INSPECTION RECORDS

All samples shall be recorded on the inspection record sheet. Electronic copy available from Horticulture NZ.