SYSTEMS APPROACH TO FRESH PRODUCE EXPORTS

TRAINING MODULES

Growing the Pacific.
Growing our future together.
L'Océanie, le terreau de notre avenir.

Secretariat of the Pacific Community (SPC)
Land Resources Division

Ministry of Agriculture (MOA), FIJI,

Secretariat of the Pacific Community (SPC),

Land Resources Division

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Australian Government

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FOREWORD

The Systems Approach to Fresh Produce Export Training Modules is a valuable document developed specifically to address Fiji's range of exported commodities. The modules outlines the procedures and roles that every party in Fiji's export system is responsible for. It identifies the partnership and roles played by government and stakeholders to ensure Fiji maintains consistency of supply and high quality exports and also to help mitigate phytosanitary issues present in the field.

The need to develop the above manual was recorded as a concern by farmers, exporters and also Ministry of Agriculture officials at a SPC funded Fiji/NZ Bilateral Quarantine Agreement (BQA) Awareness workshop held in 2003.

A major resolution of the workshop was to develop a training manual based on the requirements of the BQA which will allow farmers to have something tangible that they could refer to and help them understand why such measures are put in place by the Ministry.

SPC provided futher assistance in 2005 through funding and technical assistance and worked with the Fiji government through the Fiji Quarantine and Inspection Division.

The development of the manual by SPC Land Resources Division (LRD) and Fiji Quarantine and Inspection Division was completed in late 2005. The manual went through rigorous technical consultations with Fiji Ministry of Agriculture technical staff so as to fully reflect the current arrangements in regards to Fiji's Bilateral Quarantine Agreement (BQA) with New Zealand.

After the necessary technical consultations, the manual was presented to the Senior Management of the Fiji Ministry of Agriculture for their endorsement and approval. This was completed in July 2006 and is now officially adopted by the ministry.

The implementation of the training manual will help improve fresh produce exports and with the introduction of accreditation, would contribute to improving quality management system.

The production of the manual contributes to the Regional Trade Facilitation Program (RTFP) under PACER (Pacific Agreement on Closer Economic Relations) with funding from Australia and New Zealand. SPC implements the quarantine component of PACER.

This manual wouldn't be possible without the great assistance of the Fiji Ministry of Agriculture with funding support from the governments of Australia and New Zealand under PACER. The team of Keith Budd of AGRICHAIN NZ Ltd as project consultant, Sidney Suma and Nacanieli Waqa of SPC Land Resources Division, Luke Tirimaidoka of the Fiji Quarantine and Inspection Division, Technical staff of the Ministry of Agriculture, Fiji fresh produce farmers, exporters, quarantine treatment management, NZ importers and PITIC New Zealand all contributed to producing this excellent piece of work.

I wish to also acknowledge the Publications Section of LRD for facilitating the production and helping with the launch of the Systems Approach to Fresh Produce Exports Training Modules.

Malo 'aupito

Aleki Sisifa
Director SPC Land Resources Division

INTRODUCTION

SCOPE

This SPC training manual specifies the requirements that must be met by stakeholders in the Fresh Produce Export Supply Chain in order to become accredited to export in accordance with international and bilateral requirements.

This training manual outlines the conditions that, when met, allow the National Plant Protection Organization (NPPO) to issue an International Plant Phytosanitary Certificate (IPPC).

It is the first step in developing an accreditation system for Export stakeholders to undertake pre-export product inspection and other export certification control activities (e.g., product security, segregation, transportation, document preparation) on behalf of the NPPO.

METHODOLOGY

This document is the official record of induction training you will undergo.

The training programme is separated into a workshop type course and on-the-job training.

The course has been divided into modules and each module reflects a different area of learning.

Skills-Based Training

1. Features

Three features of skills-based training differentiate it from more traditional methods.

They are:

1. Self-instruction, with guidance from a Course Manager (coach)
2. Skills-building
3. Learning objectives

Self-instruction

This means that you work through each module by yourself, only calling on your Course Manager when you feel you need to or when you are instructed to in a module. You manage your own learning but have a guide and coach to help you when required.

Skills-building

This is achieved by starting the learning process with the simplest basic skills required, then gradually combining them into a hierarchy of more complex ones. The ability to learn each of the complex ones depends on mastery of the basics.

Learning objectives

All skills-based training is based on learning objectives – the most important parts of modules and courses. Everything in the modules and courses relates to and depends on them.

Objectives tell you exactly what you will be able to do (the skill) on completion of a module or course. They also describe the conditions (where, how, what references you can use) and the standards (how well you must perform the skill). In other words, objectives describe exactly what you must be able to do to be assessed competent by your Course Manager.

2. Courses

This skills-based course contains the training for a complete task, such as the clearance of a consignment.

Each course and module also has a learning objective that describes the skill to be learned and a Skill Check, which as the name implies, is the tool a Course Manager uses to evaluate if the particular skill has been mastered.

In addition, modules contain all the information, instructions, practice exercises and list of resources that enable you to achieve mastery of that skill.

3. Skill Checks

Because it is a tool that helps determine whether you have mastered the skill described in an objective, a Skill Check looks similar to an objective.

All the requirements of an objective must be met therefore those requirements must also be in the Skill Check.

Skill checks take two basic forms:

- Practical, on-the-job, where your Course Manager observes you performing the skill to determine if you have mastered it.

- Off-the-job, where you answer questions orally or in writing and your Course Manager compares your answers to the “official” ones.

This manual contains the sign-off pages, which is compulsory to be completed. It is your responsibility to ensure that the course instructor and you date and sign the pages of your notebook at the end of each module/course. Also ensure that all on-the-job attachment training sessions are signed-off by your instructor. (i.e., when the trainee is confident with the particular procedure).

Blank pages are provided in order for you to note information that may be particular to your worksite, i.e., Health and Safety concerns, key contacts, phone or fax numbers, or information related to where to find a resource.

INDUCTION COURSE

SIGN-OFF PAGE

[Note: This page is to be completed by the module/course instructor(s).]

NAME OF TRAINEE: _____

DESIGNATION: ……

ADDRESS:……..

Workshop Modules & Target Audience	Duration	Date	Signature
Introduction (ALL)	30 mins		
1 Systems Approach (ALL)	60 mins		
2 Terms	20 mins		
3 Grower & Exporter Registrations (ALL)	60 mins		
4 Grower Field Control Measures (ALL)	120 mins		
5 Transportation (ALL)	20 mins		
6 Packhouse (Exporters, Extension & Quarantine)	60 mins		
7 Inspection (Exporters, Extension & Quarantine)	60 minx		
8 Post Inspection Product Security (Exporters & Quarantine)	60 mins		
9 Phytosanitary Certification (Exporters & Quarantine)	60 mins		
10 Audit (Exporters, Extension & Quarantine)	120 mins		

FRESH PRODUCE EXPORT SYSTEM

ON-JOB TRAINING CHECKLIST

NAME OF TRAINEE: _____
DESIGNATION: .....
ADDRESS:.....

Fresh Produce Export Procedures	Instructor	Date	Supervisor/TL

Note:

- The above training checklist is to be signed-off by the instructor (supervisor/team leader) only when the trainee concerned has attained the required skills.
- If a particular skill is not relevant, write not applicable (N/A) in the space and sign off.

Systems Approach to Fresh Produce Exports Training

Module 1:

SYSTEMS APPROACH

(Quality Management)

TOPIC: SYSTEMS APPROACH *(Quality Management)*

Session Time 60 minutes

LEARNING OUTCOME

By the end of this session participants will be able to:

- Understand what is meant by a Systems Approach.
- Know what the Key Components of the System are.
- Understand what the Phytosanitary Measures are.

INTRODUCTION

It is recognised that Fiji has a plentiful, fertile land resource, a capable horticultural production sector and significant government service and regulatory infrastructure.

Internationally, quality management systems (QMS) are increasingly the predominant form of controlling quality, consistency and best practice in the fresh produce sector. A well-designed QMS can add considerable value by focusing on what is important within a business.

The purpose of a 'systems approach' in the context of exports is to provide, where appropriate, an equivalent alternative to procedures that are trade restrictive, such as de-infestation treatments or prohibition. In principle, a systems approach should be composed of a combination of the phytosanitary measures that can be implemented within the exporting country, such as field treatment, post-harvest disinfestations and inspection, and existing cultural practices, such as crop production, harvest and distribution methods.

The systems approach is based upon management of the risks posed by pests associated with a product – pest risk management. Pest risk management is the process of identifying ways to react to a perceived risk, evaluating the efficacy of these procedures and recommending the most appropriate options.

The advantage of the systems approach is its ability to address variability and uncertainty by modifying the number and strength of measures to meet the appropriate level of phytosanitary protection and confidence.

A systems approach can provide the opportunity to consider both pre- and post-harvest procedures that may contribute to the effective management of pest risks.

Measures used in a systems approach may be applied pre- and/or post-harvest wherever the NPPO has the ability to oversee and ensure compliance with official phytosanitary procedures.

These include:

- Measures designed to prevent contamination or re-infestation (e.g., maintaining the integrity of the lots, requiring pest proof packaging, screening packaging of the areas, and post treatment security etc).
- Pest surveillance, trapping and sampling.
- Measures that do not kill pests or reduce their prevalence but reduce their potential for entry or establishment (e.g., designated harvest or shipping periods, restriction on maturity, colour, hardness or other conditions of the commodity, the use of resistant hosts, and limited distribution or restricted use at the destination.)

EXPORT SYSTEM BACKGROUND

The current bilateral quarantine arrangement (BQA) between the New Zealand Ministry of Agriculture's biosecurity authority and the Fiji Ministry of Agriculture (MOA) concerning the access to New Zealand from Fiji of host material of fruit fly species of economic significance came into effect in 1996.

This document has been the foundation of the existing system, in which MOA's Quarantine and Extension divisions cooperate to improve quality.

International Plant Protection Convention

International standards for phytosanitary measures are prepared by the secretariat of the International Plant Protection Convention (IPPC) as part of the United Nations Food and Agriculture Organization's (FAO) global programme of policy and technical assistance in plant quarantine.

This programme makes available to FAO members and other interested parties the standards, guidelines and recommendations to achieve international harmonisation of phytosanitary measures, with the aim of facilitating trade and avoiding the use of unjustifiable measures as barriers to trade.

International standards for phytosanitary measures (ISPMs) are adopted by contracting parties to IPPC, and by FAO members that are not contracting parties, through the Commission on Phytosanitary Measures.

ISPMs are the standards, guidelines and recommendations recognised as the basis for phytosanitary measures applied by members of the World Trade Organization (WTO) under the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).

Non-contracting parties to IPPC are encouraged to observe these standards.

Phytosanitary certificates are issued to indicate that consignments of plants, plant products and other regulated articles meet specified phytosanitary import requirements and are in conformity with the certifying statement of the certificate.

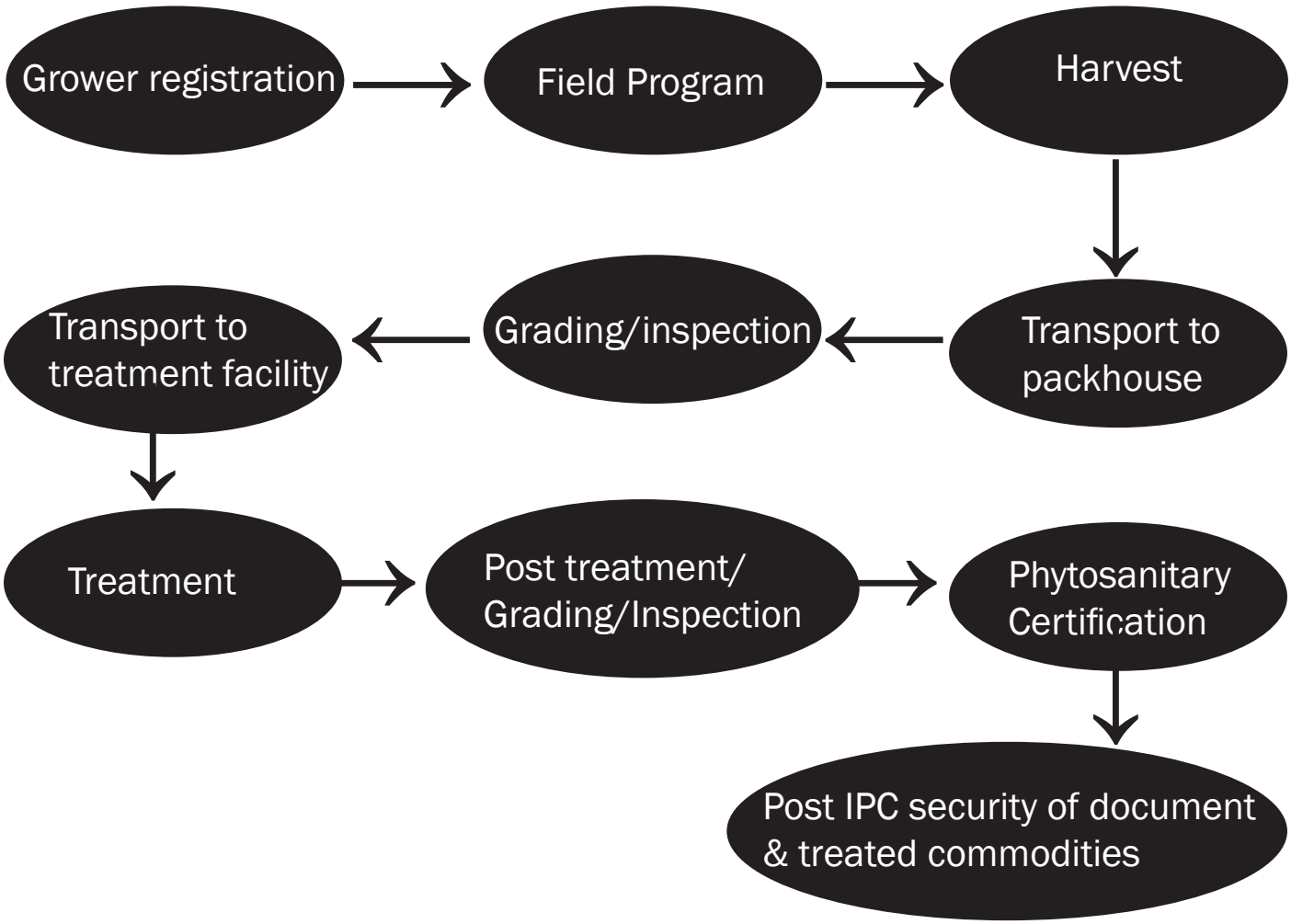
OVERVIEW OF CRITICAL COMPONENTS OF THE SYSTEM

This module outlines the quality control and management concepts of export commodities.

Key Components of the system (FIJI CONTINGENCY PLAN) are:

- Farm Registration
- On Farm Production (Field Practices, Harvesting)
- Packhouse Licensing
- Packhouse Grading
- Packhouse Quality Inspection & verification
- Fiji MOA Inspection
- Fiji MOA – Packhouse Audit
- Treatment Verification
- Phytosanitary Certificate Issuance
- Contingency Plan with in New Zealand
- Fiji MOA Quality System Audit.

Components of Systems Approach



REGISTRATION

GROWERS

Growers who intend to produce fresh produce for export in an agreement with an exporter will sign a declaration to this effect. All approved growers will be given a grower identity number.

All sites will be inspected and verified by Fiji MOA Extension officers prior to any phytosanitary decisions.

MOA Quarantine will check registered sites, maintain records of all registered growers and distribute copies of registration to all stakeholders concerned.

EXPORTERS

Exporters of fresh produce must complete a produce export licence application. All approved exporters will be given an export licence number.

All exporter facilities will be inspected and verified by Fiji MOA Quarantine inspectors prior to any phytosanitary decisions.

MOA Quarantine will maintain records of all registered exporters.

(Refer to Packhouse module – Module 6 – for requirements.)

Registration requirements cover all procedures for all commodities. Only registered farms are allowed to supply for export due to fulfilment of the phytosanitary measures that comply with the requirements of importing countries and import health standards.

FIJI PAPAYA EXPORT PATHWAY *(Carica papaya)*

1. Farm Registration

Grower & Site Registration

- Registration Declaration signed by farmer and exporter
- Farmer & papaya sites registered by MOA and given registration number
- A map of the farm is also submitted

2. Field Control Measures

Field Hygiene

- MOA Extension to ensure appropriate Phytosanitary measures are maintained
- Field should be clean at all times (weed free and well maintained)
- Spray with recommended chemicals for respective target pests
- Dried leaves should be removed and burned
- Papaya shoots emerging along trunk should be removed
- Proper irrigation practice with consistent water supply
- Ripe, over-ripe, fallen, discarded fruits removed and dispose (buriedhurnt) to prevent breeding of fruit flies

Harvest

- Papaya harvested only from :
  - registered sites
  - fields that received approved field sanitation measures
- Export papaya harvested at colour break (stage not susceptible to fruit fly attack)
- Only field bins used to collect fruits to reduce fruit damage

3. Exporter / Packhouse

Licensing - Exporter/ packhouse approved and licensed by MOA Quarantine

Packhouse Fiji MOA Inspection

- Daily records of export papaya supplied by growers is maintained by packhouse staff
- Grading and inspection done by packhouse staff
- Packhouse staff inspect on grower line basis to detect any quarantine pest and remove fruits with insect damage, ripe, rot/decay and those that do not meet quality specification. These fruits are not acceptable for the export pathway
- Quarantine inspects papaya graded by packhouse staff (on a grower line basis)
- Quarantine inspects 450 < 1000 units or 600 for > 1000 units to be covered in 3 hours inspections time
- Quarantine Officer completes and signs the official Transfer Slip for inspected papaya to be treated for export
- Only the quantity inspected and recorded on the Transfer Slip is transferred to the Quarantine Treatment Centre along with the Grower supply record
- Exporter ensures that papaya is transferred promptly to the Quarantine Treatment Centre in field bins with the completed transfer slip

4. Quarantine Treatment

High Temperature Forced Air (HTFA)

- Only the quantity of papaya indicated on the Official Transfer Slip is accepted by Quarantine at the Quarantine Treatment Centre for HTFA treatment
- Verification done on a grower line basis
- Quarantine Treatment: follow official procedures; (Treatment specification: 47.2 °C for 20 minutes)
- Papaya packed, weighed and labeled
- All treated and packed papaya stored in the pest proof facility at the Treatment Centre to maintain security of the consignment and prevent against re-contamination

5. Phytosaniltary Certificate

- A Phytosaniltary Certificate (PC) will be issued by Fiji MOA covering each shipment of papaya cleared for export to New Zealand if MOA Quarantine is satisfied that all pre-export procedures and pathway requirements have been successfully followed
- Treatment printout and additional declaration should also be attached to the PC

6. On Arrival Inspection and Clearance in New Zealand

- Accompanying documentations checked
- 600 unit sample inspected by NZMAF
- If required, commodity maybe directed to a facility for further treatment
- Biosecurity clearance is given

QUALITY ASSURANCE

Audit of Export Pathway

- *Fiji MOA formally audits the papaya export pathway of all papaya exporters to ensure compliance*
- *Fiji MOA maintains records of all the audits*

Compliance and Monitoring

On Farm Production

- Growers Producing papaya for export to NZ will comply with all field control and on farm production measures

Export Packhouse

- Packhouses will not accept papaya for export to NZ from any grower who is not registered.

- Packhouses not complying with appropriate requirements would be suspended until such time non compliance are rectified.

The Fiji MOA Inspection

- Growers and packhouses will be suspended from exporting papaya to NZ if fruit fly (any stage) is found during Fiji MOA inspection until requirements ofthe procedure are again met.

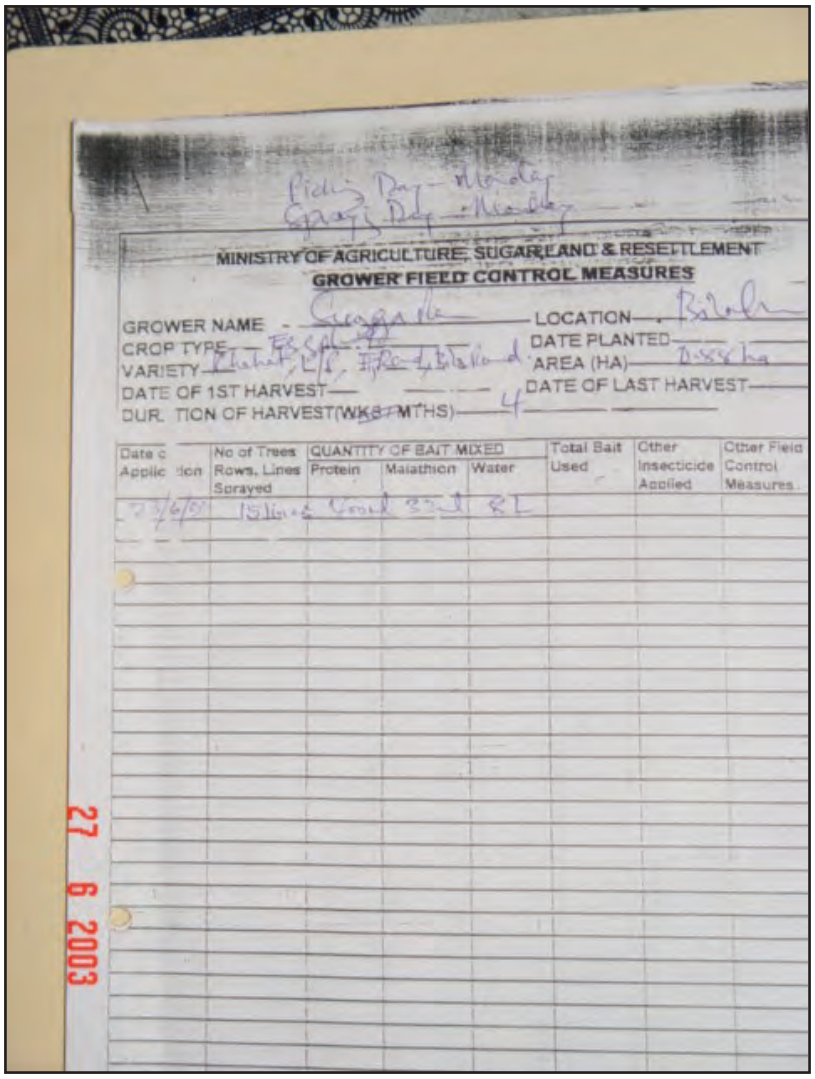
Feed-back on Non Compliance

NZMF will inform MOA of interception of regulated pests or non compliance

Fruit fly life stages

Produced by the SPC Land Resources Division in collaboration with the Fiji Ministry of Agriculture with funding assistance provided by our donor partners

ON FARM PRODUCTION



MINISTRY OF AGRICULTURE, SUGARLAND & RESETTLEMENT
GROWER FIELD CONTROL MEASURES

GROWER NAME — LOCATION —
CROP TYPE — DATE PLANTED —
VARIETY — AREA (HA) —
DATE OF 1ST HARVEST — DATE OF LAST HARVEST —
DUR. TION OF HARVEST(WKS / MTHS) —

Date o Applic tion	No of Trees Rows, Lines Sprayed	QUANTITY OF BAIT MIXED Protein	Malathion	Water	Total Bait Used	Other Insecticide Applied	Other Field Control Measures

27 6 2003

FIELD CONTROL MEASURES

Growers will source seeds or plant material from MOA research facilities where available.

Growers will harvest all export commodities in plastic crates.

Fiji MOA Extension will visit all approved growers to ensure appropriate phytosanitary measures are being maintained.

Growers will ensure that fruit that is overripe (not needed for use), has fallen on the ground or is discarded during harvesting is removed from the registered site and surrounding area and disposed of by either burying or burning.

(Refer to Module 4 for further information)

PEST CONTROL MEASURES

It is the Grower's responsibility to monitor pest levels and spray appropriately.

Growers will maintain records of all the sprays used. MOA Extension will monitor the spray programmes.

HARVEST

Growers will only harvest Fresh Produce for export from the registered sites, with compliant spray programmes and field sanitation.

Fresh produce meeting the correct maturity levels will be harvested and taken to the exporter pack house for grading in well-secured grower numbered bins.

This is product specific, see Module 4 for further details (Commodity Production System leaflets).

EXPORTER PACKHOUSE

Each packhouse will maintain daily records of which growers have supplied fresh produce for packing.

Packhouse staff will inspect all fresh produce (100%) supplied by growers for export on a grower line basis for visually detectable quarantine pests and other importing country phytosanitary requirements.

QUALITY CONTROL PRODUCE INSPECTION

The quality controller will undertake a thorough inspection of a 600-unit sample on a grower line basis and record the details.

The MOA Quarantine inspector will undertake a thorough inspection of a 600-unit sample on a grower line basis and record the details after the packhouse staff have completed their grading and inspection.

The MOA Quarantine inspector will check the packed fresh produce, and stamp and issue a phytosanitary recommendation for export with accompanying declarations.

TRANSPORT

The exporter **must** ensure that fresh produce is always transferred promptly in well-secured grower-numbered bins/packages/containers with completed documentation.

All loads **must** be covered.

HIGH TEMPERATURE FORCED AIR (HTFA) QUARANTINE TREATMENT

Only mango, eggplant, breadfruit and papaya that have been properly graded by the exporter staff, inspected by Quarantine staff and covered by correct documentation will be received at the quarantine treatment centre for HTFA treatment.

The original (or a certified copy of the original) HTFA treatment record must accompany the consignment. A unique batch number is encoded on the printout.

PHYTOSANITARY CERTIFICATE

An International Phytosanitary Certificate will be issued by the Fiji MOA covering each shipment cleared for export.

NOTES

SKILL CHECK

1. What are the advantages of a systems approach?

2. What are the key components of the system approach?

3. What are ISPMs?

4. What is an N.P.P.O.?

5. Who is responsible for Pest Control Measures?

6. How many Quality Control Inspections are there?

7. Describe two Phytosanitary measures?

_____

_____

_____

_____

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_____

Systems Approach to Fresh Produce Exports Training

Module 2:

TERMS

TOPIC: TERMS

Session Time 40 minutes

LEARNING OUTCOME

By the end of this session participants will be able to:

- Understand the terms used, and
- explain the purpose of the systems approach

INTRODUCTION

A systems approach requires greater quality control and management of export commodities.

By effectively managing the risks of pest and disease in Fijian exports, the systems approach can be used as an alternative to treatments such as methyl bromide and can open market access for new products.

The systems approach can only be undertaken with the cooperation of both the exporting and importing country, through consultation with industry, the scientific community and trading partners. However, the NPPO of the importing country decides the suitability of the systems approach in meeting its requirements, subject to consideration of technical justification, minimal impact, transparency, non-discrimination, equivalence and operational feasibility.

PEST RISK MANAGEMENT

Pest risk management is the process of identifying ways to react to a perceived risk, evaluating the efficacy of these procedures and recommending the most appropriate options.

A combination of pest risk management measures in a systems approach is one of the options that may be selected as the basis for import requirements to meet the appropriate level of phytosanitary protection of the importing country.

The conclusions from the risk assessment are used to decide whether risk management is required and the strength of the measures to be used.

QUALITY MANAGEMENT SYSTEM

A **quality management system** (QMS) is a system that outlines the policies and procedures necessary to improve and control the various processes that will ultimately lead to improved business performance. One of their purposes is quality control.

TERMS

Area	An official defined country, part of country or all or part of several countries. [FAO, 1990;revised FAO, 1995 based on the World Trade Organisation Agreement on the Application of Sanitary and Phytosanitary measures]

The official area in Fiji's case is the whole island of Viti Levu.

Based on major production areas of fruit and vegetables, the availability of fruit and vegetable exporters, the location of the Quarantine Treatment Facility and airfreight capacity.

Preferential areas are:

- Upper, Mid, Lower East Valley and Cane Coastal area of the Nadroga/ Navosa Province [South West District]

- Nadi District, Lautoka, Ba in the Province of Ba [North West District]

- Tavua District [Ba/ Ra Province]

Commodities	A type of plant, plant product or other regulated article being moved for trade or other purpose [FAO 1990; revised ICPM2001]

COMMODITIES

BQA commodities (common name)	**Scientific name**	**Abbreviations**	**General commodities**	**Scientific name**
Basil	*Ocinum basilicum*	BA	Sasa broom	*Cocos nucifera*
Bele leaves	*Abelmoschus manihot*	BL	Tamarind	*Tamarindus indica*
Betel/pan leaves	*Piper betle*	BT	Pickles	-
Breadfruit	*Artocarpus altilis*	BR	Frozen breadfruit	*Artocarpus altilis*
Cassava	*Manihot esculanta*	CA	Frozen cassava	*Manihot esculenta*
Chillies *(red fire, hot rod, bird's eye)*	*Capsicum annum*	CHrf,CHhr, CHbe	Frozen cowpeas	*Vigna uguiculata*
Chives	-	CV	Frozen chillies	*Capsicum annum*
Choraiya	*Allium schoenoprasum*	CY	Frozen jackfruit	*Artocarpus heterophyllus*
Cluster beans	*Amaranthus spp.*	CB	Frozen pigeon peas	*Cajanus cajan*
Coconut	*Cyamopsis tetragonolobus*	CO		
Coriander	*Cocos nucifera*	CD		
Cowpeas	*Coriandrum sativum*	CP		
Curry leaves	*Vigna uguiculata*	CL		
Dill	*Murraya koenigii*	DL		
Drumstick	*Anethum graveolens*	DT		
Duruka	*Moringa oleifera*	DK		
Eggplant	*Saccharum edule*	EG		
French beans	*Solanum melongena*	FB		
Ginger	*Phaseolus vulgaris*	GG		
Kava	*Zingiber officinale*	KV		
Lemongrass	*Piper methysticum*	LG		
Lettuce	*Cymbopogon citratus*	LT		
Long beans	*Lactuca sativa*	LB		
Mango leaves	*Vigna sesquipedalis*	ML		
Mango	*Mangifera indica*	MA		
Mango stick	*Mangifera indica*	MS		
Mint leaves	*Mangifera indica*	ML		
Okra	*Mentha arvensis*	OK		
Oregano	*Abelmoschus esculentus*	OR		
Papaya	*Origanum vulgare*	PA		
Papaya leaves	*Carica papaya*	PL		
Papdi	*Carica papaya*	PD		
Peanuts	*Fhaseolus lunatus*	PN		
Pigeon peas	*Arachis hypogaea*	PP		
Pineapple	*Cajanus cajan*	PA		
Plantain	*Ananas comosus*	PT		
Rocket (herbs)	*Musa paradisiaca*	R		
Sage	*Sisymbrium officinale*	SG		
Snow peas	*Salvia officinalis*	SP		
Sugar cane	*Pisum sativum*	SC		
Taro	*Saccharum officinarum*	TR		
Taro leaves	*Colocasia esculanta*	TL		
Dalo ni tana	*Colocasia esculanta*	DT		
Dalo ni tana leaves	*Xanthosoma saggitifolium*	DTL		
Thyme	*Xanthosoma saggitifolium*	TM		
Turmeric	*Thymus vulgaris*	TU		
Yam	*Curcuma longa*	YM		
Betel nut	*Discorea alata*			
	Areca cathecu			

Control Point A step in a system where specific procedures can be applied to achieve a defined effect and can be measured, monitored, controlled and corrected [ISPM Pub. No. 14 2002]

The following steps are used in the Fijian system as the Critical Control Points. Identified Critical Control Points have procedures for supply chain partners [farmers, exporters, quarantine, research and extension] to follow, in order to achieve the acceptable level of pest risk management.

Contingency Plan within Fiji

- Farm Registration
- On Farm Production (Field Practices, Harvesting)
- Packhouse Licensing
- Packhouse Grading
- Packhouse Quality Inspection & verification
- Fiji MOA Inspection
- Fiji MOA – Packhouse Audit
- Treatment Verification
- Phytosanitary Certificate Issuance
- Contingency Plan with in New Zealand
- Fiji MOA Quality System Audit.

Lot A number of units of single commodity, identifiable by its homogeneity of composition, origin, etc forming part of the consignment [FAO 1990]

The Fijian export strategies implemented to strengthen and maintain the homogeneity of a single commodity from production to export include:

1. seed source: eggplant, pawpaw and chilli seeds are produced at the Sigatoka Research Station. Chilli seeds must be sourced from Sigatoka Research Station only and no other source;
2. grower registration number; and
3. segregation in production for open pollinated crops.

All growers registered by Fiji MOA will be identified with a grower number (see Module 3).

Phytosanitary Measures any legislation, regulation or official procedures having the purpose to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests [FAO, 1995;revised IPPC, 1997;ISC, 2001].

This is an agreed interpretation for both countries.

The phytosanitary measures are clearly interpreted in the procedures of each commodity pathway. (See Module 4.)

GLOSSARY OF DEFINITIONS & ABBREVIATIONS

(Definitions for ISPM No. 14)

Additional Declaration	A statement that is required by an importing country to be entered on a phytosanitary certificate and which provides specific additional information pertinent to the phytosanitary certificate pf a consignment [FAO,1990]
Audit	A step by step look at the processes to find out if business outputs follow the documented procedures described in the Training Manuals and to see if this is working and suitable to achieve the desired business outcomes *(Phytosanitary and Grade requirements).*
CPM	Commission on Phytosanitary Measures established under Article XI [IPPC, 1997]
Commodity	A type of plant, plant product or other article being moved for trade or other purpose [FAO, 1990; revised ICPM, 2001]
Consignment	A quantity of plants, plant products and / or other articles being moved from one country to another and covered, when required by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots) [FAO, 1990; revised ICPM, 2001]
Consignment in Transit	Consignment which passes through a country without being imported, and without being exposed in that country to contamination or infestation by pests. The consignment may not be split up, combined with other consignments or have its packaging changed (formerly country of transit) [FAO, 1990; revised CEPM, 1996; CEPM, 1999; formerly **Country of transit**]
Containment	Application of phytosanitary measures in and around an infested area to prevent spread of a pest [FAO, 1995]
contamination	Presence in a commodity, storage place, conveyance or container, of pests or other regulated articles, not constituting an infestation [CEPM, 1996; revised CEPM, 1999]
Country of Origin	Country where the plants were grown(of a consignment of plants)[FAO, 1990; revised CEPM, 1996; CEPM, 1999]
Country of Origin	Country where the regulated articles were first exposed (of regulated articles other to contamination by pests [FAO, 1990; revised CEPM, 1996; than plants or plant products) CEPM, 1999]
Devitalization	A procedure rendering plants or plant products incapable of germination, growth or further reproduction [ICPM 2001]
Eradication	Application of phytosanitary measures to eliminate a pest from an area [FAO, 1990; revised FAO, 1995; formerly **Eradicate**]
FAO	Food and Agriculture Organization of the United Nations
Field	A plot of land with defined boundaries within a place of production on which a commodity is grown [FAO, 1990]
Free From	Without pests (or a specific pest) in numbers or (of a consignment, field quantities that can be detected by the application of Or place of production) phytosanitary procedures [FAO, 1990; revised FAO, 1995: CEPM, 1999]
Fresh Produce	Edible products that are derived wholly from living plants usually fruits, leaves or roots.
Good Agricultural Practice (GAP)	Best industry practices that are a combination of operations and quality management procedures aimed at ensuring that products are consistently grown to meet specifications and customer expectations.

Harmonization	The establishment, recognition and application by different countries of phytosanitary measures based on common standards [FAO, 1995; revised CEPM, 1999; based on the World Trade Organisation Agreement on the Applcation of Sanitary and Phytosanitary Measures]
Import Permit	Official document authorizing importation of a commodity in accordance with specified phytosanitary requirements [FAO, 1990; revised FAO, 1995]
Inspection	Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly **Inspect**]
Intended Use	Declared purpose for which plants, plant products, or other regulated articles are imported, produced, or used [ISPM Pub. No. 16, 2002]
ISPM	International Standard for Phytosanitary Measures [CEPM, 1996; revised ICPM, 2001]
MPI	Ministry of Primary Industries
MPL	Maximum pest limit
MRL	Maximum residue level
MGDL	Maximum grade defect level
National Plant Protection Organization	Official service established by a government to discharge the functions specified by the IPPC [FAO, 1990; revised ICPM, 2001]
NPPO	National Plant Protection Organization [FAO, 1990; revised ICPM, 2001] (e.g., Fiji MASLR Quarantine)
Official Control	The active enforcement of mandatory phytosanitary regulations and the application of mandatory phytosanitary procedures with the objective of eradication or containment of quarantine pests or for the management of regulated non-quarantine pests [ICPM, 2001]
Pathway	Any means that allows the entry or spread of a pest [FAO, 1990; revised FAO, 1995]
Pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997]
Pest Free Area	An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially managed [FAO, 1995]
Pest Free Place of Production	Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period [ISPM Pub. No. 10, 1999]
Pest Free Production Site	A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period and that is managed as a separate unit In the same way as a pest free place of production [ISPM Pub. No. 10, 1999]
Pest Risk Analysis	The process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it [FAO, 1995; revised IPPC, 1997]
Phytosanitary Action	An official operation, such as an inspection, testing, surveillance, or treatment, undertaken to implement phytosanitary regulations or procedures [ICPM, 2001]

Phytosanitary Certificate	Certificate patterned after the model certificates of the IPPC [FAO, 1990]
Phytosanitary Measure	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests [FAO, 1995; revised IPPC, 1997; ISC, 2001] *(The agreed interpretation of the term phytosanitary measure accounts for the relationship of phytosanitary measures to regulated non-quarantine pests.* *This relationship is not adequately reflected in the definition found in Article II of the IPPC (1997).)*
Phytosanitary Regulation	Official rule to prevent the introduction and / or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests, including establishment of procedures for phytosanitary certification
Place of Production	Any premises or collection of fields operated as a single production or farming unit. This may include production sites which are separately managed for phytosanitary purposes [FAO, 1990; revised CEPM, 1999]
Plant Products	Unmanufactured material of plant origin (including grain) and those manufactured products that, by their nature or that of their processing, may create risk for the introduction and spread of pests [FAO, 1990; revised IPPC, 1997; formerly **Plant product**]
Plants	Living plans and parts thereof, including seeds and germplasm [FAO,1990; revised IPPC, 1997]
Planting	Any operation for the pacing of plants in a growing medium, or by grafting or similar operations, to ensure their subsequent growth, reproduction or propogation (*including replanting*) [FAO, 1990; revised CEPM, 1999]
Plants for Planting	Plants intended to remain planted, to be planted or replanted [FAO, 1990]
Practically Free	Of a consignment, field, or place of production, without pests (or a specific pest) in numbers or quantities in excess of those that can be expected to result from, and be consistent with good cultural and handling practices employed in the production and marketing of the commodity [FAO, 1990; revised FAO, 1995]
Quality	The Quality of a product or service refers to the perception of the degree to which the product or service meets the customer's expectations. Quality has no specific meaning unless related to a specific function and/or object. Quality is a perceptual, conditional and somewhat subjective attribute
Quarantine Pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled [FAO, 1990; revised FAO, 1995; IPPC, 1997]
Re-exported Consignment	Consignment which has been imported into a country from which it is then exported without being exposed to infestation or contamination by pests. The consignment may be stored, split up, combined with other consignments or have its packaging changed [FAO, 1990; revised CEPM, 1996; CEPM, 1999; ICPM, 2001; formerly **Country of re-export**]
Regulated Area	An area into which, within which and / or from which plants, plant products and other regulated articles are subject to phytosanitary regulations or procedures in order to prevent the introduction and / or spread of quarantine pests or to limit the economic impact or regulated non-quarantine pests [CEPM, 1996; revised CEPM, 1999; ICPM, 2001]
Regulated Article	Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved [FAO, 1990; revised FAO, 1995; IPPC, 1997]

Regulated Non-Quarantine Pest	A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and whish is therefore regulated within the territory of the importing contracting party [IPPC, 1997]
Regulated Pest	A quarantine pest or a regulated non-quarantine pest [IPPC, 1997]
RNQP	Regulated Non-Quarantine Pest [ISPM Pub. No. 16, 2002]
Suppression	The application of phytosanitary measures in an infested area to reduce pest populations [FAO, 1995; revised CEPM, 1999]
Test	Official examination, other than visual, to determine if pests are present or to identify pests [FAO, 1990]
Treatment	Officially authorized procedure for the killing, removal or rendering infertile of pests [FAO, 1990; revised FAO, 1995]

NOTES

SKILL CHECK

1. What does a Lot mean?

_____

_____

_____

_____

_____

2. A “system approach” requires greater quality control and management of the export commodities why?

_____

_____

_____

_____

_____

3. Explain from the glossary the following:

   (a) commodity

_____

_____

_____

(b) consignment

_____

_____

_____

(c) fresh produce

(d) GAP

(e) Inspection

(f) Pathway

(g) Pest free areas

Systems Approach to Fresh Produce Exports Training

Module 3:

GROWER & EXPORTER REGISTRATIONS

TOPIC: GROWER & EXPORTER REGISTRATION

Session Time 60 minutes

LEARNING OUTCOME

By the end of this session participants will be able to:

- Explain the purpose of the registration process
- Understand the registration requirements for Growers and Exporters
- Be able to complete the appropriate forms.

INTRODUCTION

The purpose of the registration process for Growers and Exporters is three fold:

1. It introduces the Grower and Exporter to the formalities of the Export System.
2. It provides evidence of the homogeneity of the produce (lot) supplied for export.
3. It provides accurate information for trace back and communication.

It also confirms the source of produce, which complied with all pest risk management options.

This registration will enable the MASLR to monitor production, non-conformance levels, quality of the produce and sanitary farm hygiene. In order to maintain quality and fulfil market demand at all times the exporter needs to continue with farm registration. In case of any interceptions offshore the identification number will be used as the trace back audit to determine the strength of the pest risk management system.

All exported produce must have the registered grower number.

Only registered farms are allowed to supply produce for export.

Only registered exporters are allowed to export produce.

The documentation must be accuracy completed and comply with the registration requirements. The Grower information and recommendation by the MASLR Extension must be correct when verified by MASLR Quarantine. Any noncompliances will lead to the rejection of the registration application until the requirements have been met.

GROWER REGISTRATION

Growers must complete a Grower Declaration supported by their exporter.

If the Grower has more than one exporter a Grower Declaration is required for each exporter.

All approved growers will be given a grower identity number, e.g., 191 0805 MA

- The first number (191) is the next sequential number of the grower to be registered.
- The second is the Month of application ie August (08) and is an important check for production verification used in verifying the yield and the life of the production cycle.
- Third is the year registration was done i.e. (05) referring to year 2005.
- The fourth part is 2 letters that corresponds to the crop in the Export Commodity list. (MA =Mango)

The register is held by:

Export Systems Coordinator
Fiji Quarantine and Inspection Division.
MOA
P.O Box 9035
Nadi

Note: An identified field or portion of the field cannot have more than one exporter registered to that field or portion of the field.

Grower

Obtain the Grower Declaration Form from the extension Officer and complete the following sections:

Section	Information / Action Needed
Name	Complete your Full Name
Location	The exact physical location of the farm
Contacts	Home phone number & Cell phone number
Crop	The crop and variety to be exported
Exporter	Full Name, contact address, contact phone numbers including facsimile
Exporter Stamp	Obtain the Exporter Stamp to verify the export pathway, sign and date it
Sign / Date	Sign and date this section before forwarding to your local extension office

MOA Extension

Visit the site to verify the information on the grower declaration.

Complete the section marked MASLR Extension:

- Verify the variety
- Verify the area and record
- Estimate the weekly supply
- Estimate the duration of supply.

During the first site visit complete the following:

- Draw a site map that accurately describes the size, location and features of the growing area
- Discuss with the grower, the export pathway expectations
- Issue the grower with a fact sheet
- Inspect the growing area
- Discuss crop hygiene and pest control measures (See Module 3)
- Establish the crop spray programme (if required). (See Module 3)

On completion of the form forward to: MOA Quarantine.

MOA Quarantine Officer

Visit the site to verify the information on the grower declaration.

Complete the section marked MOA Quarantine:

- Confirm the site map accurately describes the size, location and features of the growing area
- Verify the variety
- Inspect crop hygiene and pest control measures
- Inspect the temporary storage area
- Inspect crop spray programme (if required).

On completion forward for final approval to: **Export Systems Coordinator,**
Fiji Quarantine and Inspection Division,
MOA,
P.O Box 9035,
Nadi.

A record of this approval will be held by the:

- Grower
- MOA Extension Officer responsible for the grower
- MOA Quarantine Export Systems Coordinator.
- Exporter

Grower Deregistration

The de-registration process will occur when the following condition appropriate for the facilitation of phytosanitary measures is not met:

- Growers do not implement pest risk management measures as recommended by MOA Extension and are identified during an audit process. The grower will be given time to correct the situation as recommended by MOA Extension/Quarantine. This will be reviewed for compliance on a time frame decided and agreed by the grower and MOA Extension/Quarantine. In a situation where a farmer complies with corrective measures in the agreed time, the suspension imposed on the farmer will be lifted and he/she will be allowed to supply again for export.

- The quality of the produce in the registered site is below standard. This will be decided by Extension staff, who will continually visit registered sites

- Pest and disease occurrences affect production and quality. MOA should implement a phytosanitary decision appropriate to the situation.

- Feedback from quarantine inspection on the interception of quarantine pest(s) or other regulated organisms and/or contamination (chemical, odour, etc.) recommends immediate suspension and corrective actions are highlighted to the authorities concerned.

- A consignment is rejected by the quality controller of a registered packhouse due to quality, pests or disease. This must be reported to MOA, who will then make decisions as appropriate.

Production should be stopped from a locality within the project area where the prevalence of pests and disease threatens production and quality. MOA should identify other localities within the project area for production.

GROWER DECLARATION

Exporter Name			
Grower name		**Phone**	
Physical Location		**Mobile**	
Postal Address		**Fax**	
Crops			

I _____ (**Grower Name**) am growing the following crops on my farm, at the above location for supplying to _____ **(Exporter Name)**

Signature of Grower: _____

Date: _____

Exporter Stamp

MOA EXTENSION DIVISION: Verification and Recommendation			
Variety (wks/ mths)	**Area**	**Est. supply** (Wkly kg)	**Duration harvest**

Production Site		**Fruit fly monitoring (if applicable)**	
Field Control Measures		Cue & ME traps	
Field Hygiene		Host crops present	

Comments:

Stamp / Seal

MOA Extension Officer		Date	

Recommended /Not Recommended

[Description and Map showing the location of Growing sites is attached]

MOA Quarantine Check			
MOA Quarantine Officer **Name**		Signature	Date

FIJI MOA Quarantine Approval			
MOA Export Systems Coordinator		Signature	Date

Approval Stamp

EXPORTER /PACK HOUSE REGISTRATION

Every exporter/ packhouse packing fresh produce for export must be approved and licensed by N.P.P.O. and issued with a license number.

Records of these approvals will be held and maintained by:

- Exporter
- Export Systems Coordinator
- Fiji MOA Quarantine Head Office
- Packhouse

The license register is held by:

Licensing Officer
Fiji Quarantine and Inspection Division.
Ministry of Primary Industries,
PO Box 18360,
Suva.

The key Information required is:

Export Crop Information:

- Business name
- Business location / contacts
- Packhouse location / contacts
- Export crop
- Export suppliers (Growers).

Export Business Information:

- Business ownership
- Business duration
- Business development
- Export statistics (previous year's figures)

Exporter

Obtain the Export Licence application form from the Export Systems Coordinator, Fiji Quarantine and Inspection Division, MOA.

Complete as much information as possible and forward the completed form to:

Licensing Officer
Fiji Quarantine and Inspection Division
Ministry of Primary Industries,
PO Box 18360
Suva.

MOA Extension will forward all applications with recommendations to MOA Quarantine Licensing Officer.

MINISTRY OF AGRICULTURE, SUGAR & LAND RESETTLEMENT

Agriculture Quarantine Section
Old Health Center Building
Cnr Renown Street & Harris Road
c/- MASLR HQ, Private Mail Bag
Raiwaqa, SUVA, FIJI ISLANDS

Telephone No.: [679] 331 2612

Facsimile No.: [679] 330 5043

PRODUCE EXPORT LICENCE APPLICATION FORM

Fruit Export & Marketing Act (Chapter 154 – Section 7)

1. The Business Name: _____

2. The Business Postal Address: _____

3. The Business Phone Contact: _____

4. The Principal Place of Operation: _____

5. The Company Registration Number: _____

6. Details of Crops for Export

List of Commodity to be exported	Exporting Country	Estimate Quantity per Month

7. Details of Packhouse:

   i. Do you own a packhouse? Yes/No

   ii. If Yes, please attach a photograph of the packhouse and list the facilities available?

   iii. If No, then describe how and where your company will process the produce for export and also attach other relevant information.

_____

_____

_____

_____

_____

_____

8. Details of Suppliers (Growers)

Growers Name	Type of Commodity	Location	Growers Name	Type of Commodity	Location

9. Declaration by Applicant

I certify that all the information given in this application is correct to the best of my knowledge.

Full name of applicant: _____

Designation: _____

Address: _____

Date at :……..…. this ……..…… day of …….. 20……

……..
Signature of Applicant

FOR OFFICIAL USE ONLY

A. QUARANTINE LICENSING OFFICER

Verification / Recommendation:

Comments: _____

_____

_____

_____

_____

_____

_____

Name: _____

Signature: _____

Date: _____

B. AUTHORISING OFFICER

Approved / Rejected

Comments: _____

_____

_____

_____

_____

_____

_____

Name: _____

Signature: _____

Date: _____

APPENDIX: PRODUCE EXPORT LICENCE APPLICATION FORM

1. Business Ownership Information

The name of every individual who is a partner in the business	Nationality of every individual	Residence of individual who is partner in the firm	Telephone Contact

2. Length of time that company has been in the produce exporting business?

_____

3. Describe the business development plan for the company over the next 5 years.

_____

_____

_____

_____

_____

_____

4. Please provide details of exports for the last year.

Produce Commodity	Total Export Weight (Kgs)	Destination

5. Declaration by Applicant

I certify that all the information given in this application is correct to the best of my knowledge.

Full name of applicant: _____

Designation: _____

Address: _____

Date at :…….…. this ……..…… day of …….. 20…….

Signature of Applicant: _____

MOA Quarantine Officer

The Export Systems Coordinator will check the information and forward the form to the Field Quarantine Officer who will visit the packhouse to verify the information on the application.

Complete the section marked MASLR Quarantine:

- Verify the location
- Verify that the Packhouse Standard has been met.

During the first site visit complete the following:

- Draw a site map that accurately describes the size, location and features of the packhouse
- Discuss with the packhouse operator, the export pathway expectations
- Issue a Fact Sheet to the Packhouse Operator
- Inspect the packing and storage areas
- Discuss packhouse hygiene and pest control measures.

On completion return for final approval to: **Licensing Officer,**
Fiji Quarantine and Inspection Division,
Ministry of Primary Industries,
PO Box 8360,
Suva.

A record of this approval will be held by the:

- Exporter;
- Locality MPI Extension Officer
- MOA Quarantine officer responsible for the packhouse
- MOA Quarantine Export Systems Coordinator; and

NOTES

SKILL CHECK

1. What is the purpose of the grower registration process?

2. What are the 7 key components of the Grower Registration?

3. Who holds the record of Produce Export Licence Approval??

4. What actions are carried out at a Packhouse site visit?

5. What export **Crop** information is required for grower registration?

6. What will happen if a grower and/or exporter does not implement Pest risk management issues?

Systems Approach to Fresh Produce Exports Training

Module 4:

GROWER FIELD CONTROL MEASURES

TOPIC: COMMODITY SPECIFIC FIELD PROGRAMME

Session Time 120 minutes

LEARNING OUTCOME

By the end of this session participants will be able to:

- Understand the function of extension (advisory) services in the provision of advice on “Best Practice” for growers.
- Know the critical Phytosanitary components that enable crops to be presented for export.

RESOURCES

BQA information sheets:

- Breadfruit
- Mango
- Papaya
- Eggplant
- Chillies

Crop Calendar.

Export Crop Production Information Sheets.

INTRODUCTION

The following section covers the procedures in place for the export of fresh produce. Grower Field Control Measures are pest risk management activities that reduce the population of regulated pests or disease in the registered field.

Pest monitoring and surveillance will be conducted in the production area to ensure low pest prevalence or area freedom of regulated pests in the production area.

Trapping and auditing are also pest risk management options.

The key functions of grower field control measures are:

- To ensure Phytosanitary compliance in the implementation of any given commodity pathway procedures.
- Consistency of supply and quality through on farm production practices.

All Growers who intend to grow fresh produce for export will sign a declaration to this effect. (Refer to Module 3)

All sites where the approved commodities are grown will be inspected and verified by Fiji MOA Extension Officers prior to any Phytosanitary decisions being made.

In order to effectively manage the supply of “approved“ fresh produce and avoid substitution, the growing area needs to be verified and estimated harvest yields established.

The MOA Quarantine will maintain records of all registered growers approved to export and verify that Phytosanitary requirements are being met on a monthly basis.

KEY ISSUES:

- Orientation (export system)
- Site selection
- Site fertility
- Production programme
- Field control measures
- Records
- Harvesting

Orientation

Any farmer that is registered for the first time must attend an Orientation Program run by MASLR Extension covering the following areas:

- Registration and de-registration
- Quality
- Pest management
- Programme compliance
- Purchasing process
- Pre-harvest/ post-harvest controls
- Auditing

Site Selection

In selecting a site, it should have:

- Good drainage
- Accessibility to water and roads
- Good fertile soil
- Documented previous cropping history
- Information on pest occurrence

Site Hygiene

Site Fertility

Fertility of the selected site(s) must be determined:

- Soil testing should be carried out annually
- Recommended fertilizer applications to correct deficiencies are to be applied accordingly
- MOA Extension must keep soil analyses data

Production Program

Crop rotation and fallow practices must be followed (Refer to Crop Calendar)

Best Practice production techniques for each commodity must be followed. These are outlined in the commodity information leaflets available from the nearest MOA Extension Office.

MOA Extension must keep electronic records of individual grower cropping program and production techniques.

MOA Extension must also provide growers with pest occurrence information.

MONITORING OF CROPS PLANTED

MOA Extension's primary role is to improve crop performance, however, verification is an important part of the systems approach to maintaining Phytosanitary integrity.

A description of the crops planted and map showing the location of growing site is required and this needs to be accurate. (Refer Module 3)

- The area of the site in relation to the planting density will form the basis for estimating yield.
- Using the crop yield information for the locality estimate the quantity of commodity that will be harvested per week.
- For Fruit Fly host material record the number and name of host commodities in the registered field.
- It is important to record the planting date in order to establish information that supports the yield estimation process.

Sigatoka Research Station will supply specific fresh produce seed/seedlings and the district MOA Extension staff will monitor the growing.

MOA Quarantine's role is to verify the Phytosanitary requirements.

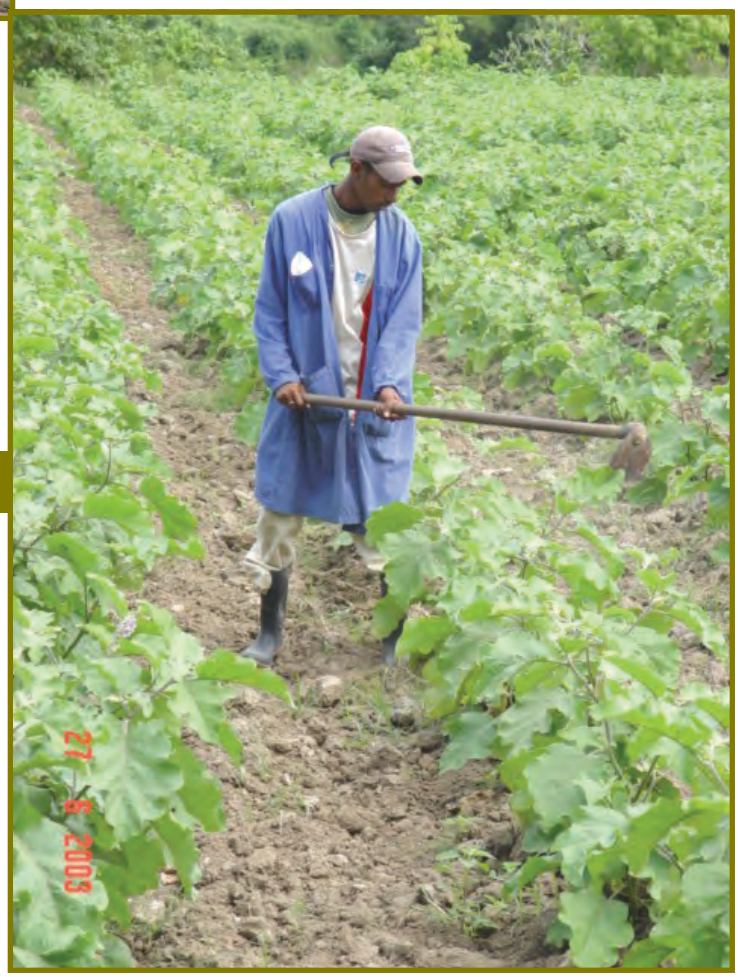
Field Monitoring

Cross-pollination

(Birds eye chillies growing pointing up when they should be pointing downwards)

Field Sanitation

Weed Control (Cultural practice)



FIELD CONTROL MEASURES

Basic Elements of Crop Protection

Protection of crops against pests, diseases and weeds must be achieved with the appropriate minimum pesticide input and with minimum adverse environmental impact.

Basic elements of crop protection are:

Prevention - Indirect measures to reduce pest, disease or weed infestation, such as:

- Choice of crop / variety
- Use of crop rotations
- Use of disease resistant varieties
- Mechanical and physical methods of crop husbandry
- Good fertilizer and irrigation practices
- Good hygiene practices
- Creation of habitats or beneficial
- Climatic controls (temperature, humidity, light, etc.)

Growers must ensure that fresh produce that is over ripe (not needed for use) that has fallen on the ground or been discarded during harvesting is removed from the registered site and surrounding area and disposed of.

If the product is Fruit Fly host material the disposal must be by burying or burning.

Fiji MOA Extension staff will visit all approved growers to ensure appropriate Phytosanitary measures are being maintained.

Observations – Methods to determine when action is required, including:

- Routine crop inspection and pest monitoring
- Use of diagnostic and forecasting systems (traps, tests)
- Use of decision support systems (e.g., information technologies, literature, radio, television)
- Use of consultants where necessary

Intervention – Direct measures to reduce pests, diseases and weeds to economically acceptable levels, through:

- Cultural and physical controls (e.g., mechanical weeding)
- Biological controls (beneficial insects, mites, nematodes, Bt, viruses, preservation of natural enemies)
- Chemical controls (insecticides, fungicides, herbicides)
- Botanical/plant extracts eg. neem, marigold (complimentary to the above since some pests are inherently difficult to control with conventional pesticides. Most of the products belong to the category of medium to broad spectrum pesticides and work by intervening at several stages of the life of an insect.)

1. Pest and Disease Monitoring Details

The documented monitoring of pests and disease will be carried out during the growing season to determine when any chemical application is necessary.

2. Threshold Level

Threshold levels are set as importing country Maximum Pest Limits (MPL's) and as customer specifications set as maximum Defect Levels (MGDL's).

Approved Procedures

Growers shall follow the prescribed options for crop protection programmes:

- Demonstrate and record the need prior to spraying from 1 & 2 above and keep records of application.
- Train workers in the appropriate requirements of the programme and ensure that they are able to follow instructions.
- Equip workers with suitable protective clothing.
- Ensure that spray equipment is suitable for use on the land in question, is in good condition and calibrated regularly to ensure accurate delivery of the required quantity of spray.
- Ensure correct calculation of spray mix required before spraying and correctly dispose of any excess.
- Ensure that pesticides are stored in accordance with local regulations.
- Finally, triple rinse empty pesticide containers with water and empty container into the sewerage to avoid exposure to humans and contamination of the environment.

Growers must report any suspected new pest occurrence to MOA Extension.

Agricultural Chemicals

To prevent maximum residue limits (MRL's) being exceeded, chemicals used during growing and after harvesting of produce shall be authorized by MOA Extension and applied according to directions, and withholding periods outlined by the manufacturer.

- Growers should only use agricultural chemicals, which are acceptable for the cultivation of the specific fruit or vegetable and should use them to the manufacturer's instructions for the intended purpose.

- Agricultural workers who apply chemicals should be trained in proper applications procedures.

- Growers should keep records of agricultural chemical applications. Records should include information on date of application, the chemical used, the crop sprayed and the pest or disease against which it was used, the concentration, method and frequency of application.

- Agricultural chemical sprayers should be calibrated regularly to control the accuracy and rate of application.

- The mixing of agricultural chemicals should be carried out in such a way as to avoid contamination of water and land in the surrounding areas and to protect employees involved in this activity from potential hazards.

- Sprayers and mixing containers should be thoroughly washed after use, especially when used with different agricultural chemicals on different crops, to avoid contaminating fruits and vegetables.

- Agricultural chemicals should be kept in their original containers, labeled with the name of the chemical and the instructions for application. Agricultural chemicals should be stored in a safe place, away from production areas and harvested fruits and vegetables, and disposed of in a manner that does not pose a risk of contaminating crops.

FRUIT FLY BAIT SPRAYING

The following Fruit Fly host commodities are sprayed with protein bait insecticide spray:

Mango: pickling stage: three (3) sprayings; mature stage: six (6) spraying and continuous on a weekly basis depending on production.

Eggplant: two (2) sprayings prior to first harvest and at weekly intervals.

Breadfruit: six (6) sprayings prior to first harvest and at weekly intervals.

Registered Growers will apply protein bait insecticide spray as recommended, and MOA Extension staff will monitor the spraying.

This activity is recorded in the bait spraying records for MOA quarantine audit.
Extension staff monitor spraying and ensure this is done in accordance with best practice and the withholding period of 7 days is observed.

Spraying is conducted after harvesting is done.

The rate of application and mixture and other chemical used is recorded. The description of the registered lot is also recorded.

Non-compliance in this area of the Phytosanitary procedure will result in suspension until appropriate corrective measures are implemented.

Growers will maintain records of all the sprays undertaken for MOA inspection purposes:

- Protein component used
- Spray solution for each application – quantity
- Date of application
- Total number of trees, area sprayed at each application including other Fruit Fly host plants
- Date of first harvest
- Date of last harvest on site

MOA Extension must ensure bait is available at all times for the growers to maintain and continue in compliance to the Fiji MOA recommendation.


Protein Bait
Protein
Insect
Lure
27 6 2003


Accurate Spray Measuring
27 6 2003

FIELD CONTROL MEASURES

GROWER BAIT SPRAY RECORD

[For Export of Fruit Fly Host Commodities from Fiji to New Zealand]

Grower Name: _____ Locality: _____

Supplier (Exporter): _____

Date Supplied	Quantity Supplied	Date Sprayed	Amount Used	Bait Balance	Date of Audit / Remarks by Extension Officer	Quarantine Audit Remark and Date

Records

Growers must maintain details of key activities carried out:

- Spraying / chemical records
- Soil test analyses / fertilizer recommendations
- Purchasing
- Grower supply record
- Grower grading record

Extension

Farmers will be assessed weekly by MOA Extension to address non-compliances and recommend corrective actions.

Extension must maintain records on:

- Farm registrations (personnel, farming details)
- Non-compliances and decision of corrective measures for each individual grower
- Enquiries, complaints and requests from registered farmers

Harvest

All harvesting from registered fields will be controlled / monitored and approved by MOA Extension in relation to six areas:

- Quality of the commodity harvesting techniques
- Time of harvesting
- Harvesting in relation to spraying schedules
- Crates
- Handling
- Grading

Harvest Product Specifications

Papaya	-	Colour break (3/4 ripeness)
	-	weight : 300 – 700 grams
Eggplant	-	2/3 of the full size

- Length (in millimetres)

Variety	Small	Medium	Large	Range
Chahat	100 – 140	150 - 180	185 – 220	100 - 220
Round	50 – 60	70 – 95	100 – 135	50 – 135
Long	120 - 200	210 – 250	260 - 350	120 – 350

- Size (in mm)

Variety	Small	Medium	Large	Range
Chahat	180 - 130	230 - 180	320 - 230	320 - 130
Round	280 - 150	350 - 280	450 - 350	450 - 150
Long	100 - 35	130 - 100	175 - 130	175 - 75

Mango - Immature green for Pickling

- Mature

Breadfruit - Mature green

Example of Field Packing

Eggplant Harvesting

Calyx removal due to presence of Arthrigona

Packing at the Export Packhouse

Method used for breadfruit harvesting

perforation

EXPORT SPRAY DIARY

Export Season:

GROWER INFORMATION

Name ..... Telephone .....

Address ..... Grower Registration No. _____ ☐☐☐☐

SPRAY APPLICATOR INFORMATION

Name ..... Telephone .....

Address ..... Spray Applicator's Growsafe Certificate No. _____ ☐☐☐☐☐☐☐

Name ..... Telephone .....

Address ..... Spray Applicator's Growsafe Certificate No. _____ ☐☐☐☐☐☐☐

Planting Date ..... Harvest Date ..... Packhouse Supplied .....

Location of Crop Grown ..... Commodity / Variety .....

APPLICATION INFORMATION

Date Applied	Block Name/No.	Variety	Chemical Used HERBICIDES / FUNGICIDES / INSECTICIDES	Product Brand Name	Application Rate/ha	Water Rate/ha	Comments/Conditions

GROWERS COPY

I declare this to be a true and accurate record of the chemicals applied to this crop. *Grower's Signature:* .....

NOTES

SKILL CHECK

1. What are the key functions of Grower Field Control Measures?

_____

_____

_____

2. Who inspects and verifies all sites where the approved commodities are grown, prior to any Phytosanitary decisions being made?

_____

_____

_____

_____

3. Who will maintain records of all registered growers approved to export and verify Phytosanitary requirements are being met on a monthly basis?

_____

4. What are the Key Issues?

_____

_____

_____

_____

_____

_____

5. What are the basic elements of crop protection?

_____

_____

_____

_____

_____

_____

_____

6. All harvesting from registered fields will be controlled / monitored and approved by MOA Extension in relation to which six areas:

_____

_____

_____

_____

_____

_____

_____

Systems Approach to Fresh Produce Exports Training

Module 5:

TRANSPORTATION

TOPIC: TRANSPORTATION

Session Time 20 minutes

LEARNING OUTCOME

By the end of this session participants will be able to transport fresh produce:

- Without Damage
- Without Deterioration
- Without Loss
- Without Microbiological, Physical or Chemical Contamination

INTRODUCTION

Transportation provides a critical step in maintaining the quality of fresh produce.

It is also an element in the Quality Management Programme where the risk of product substitution or contamination needs to be controlled.

Transportation Means

All trucks to be used for transferring export commodities especially from the export packhouse to the treatment centre must be enclosed and refrigerated with good/acceptable operating conditions.

Trucks will be continually monitored by MOA Quarantine.

Driver Hygiene

- Smoking shall be prohibited while loading / unloading or handling product
- Drivers should wear clean protective clothing as supplied by the company
- Drivers shall wash their hands regularly throughout their shift and especially before handling exposed or unprotected products.

Vehicle Hygiene

- Harmful, hazardous substances or materials shall not be transported with food products
- Vehicle refrigeration equipment, if fitted, shall be in good working order and used.
- Before loading the truck it should be visually inspected to ensure that it is:
  - Clean
  - Not carrying mixed loads that could contaminate the fresh produce
  - Odour free
  - The vehicle is in good repair.

Product Hygiene & Temperature

Loading:

- The truck should be loaded as quickly and efficiently as possible to prevent over exposure of the product to sun, dust and rain.
- The driver should ensure that any exposed produce at pick up is clean and reject any that is not.
- The loaded product should be evenly distributed and should ride safely in order to avoid damage to packaging, people or the vehicle in the event of violent breaking or cornering.
- The load must be covered.
- Tarpaulins must be clean and in good repair

<u>At its destination</u>:

- All product and packaging shall be clean on arrival at destination.
- Trucks should park undercover if possible. If no cover is available the truck should be parked in the shade; otherwise it should be unloaded from the shaded side so that the produce on the deck is not in direct sunlight.
- Unload the truck quickly and transfer produce as quickly as possible.
- Ensure that the load contents match those listed on the **Transfer form (appendix ??)**
- The driver shall ensure that the truck is unloaded safely and that no damage is caused to product.

Records

The Grower Supply record must be kept with the load.

Vehicle Breakdown Procedures

If the vehicle breaks down, the maintenance of produce integrity is essential. The exporter shall ensure that all drivers are trained and instructed in the correct procedure.

The driver shall immediately report vehicle breakdown to the export manager.

If the truck breaks down, another vehicle should be dispatched and the product transferred from the broken-down vehicle.

A procedure and contracts shall be in place to deal with accidents and damage occurring when goods are in transit, e.g. salvage or condemnation following damage to goods in a road accident. This procedure shall be compatible with the requirements of the insurer.

NOTES

SKILL CHECK

1. What risks in the Quality Management Programme need to be controlled in regard to transport?

2. What are the Driver hygiene requirements?

3. Before loading the truck what should a visual inspection ensure?

4. What are the 5 key points to observe at loading?

5. At the destination point what elements should be addresses?

6. If the vehicle breaks down what is essential to do?

Systems Approach to Fresh Produce Exports Training

Module 6:

PACKHOUSE

TOPIC: PACKHOUSE REQUIREMENTS

Session Time: 60 minutes

LEARNING OUTCOME

By the end of this session participants will be able to:

- Explain the importance of Packhouse Standards
- List the key requirements for packhouses
- Complete the required documentation correctly.

RESOURCES

- Fresh Produce Grade Standards.

INTRODUCTION

As we have stated in earlier Modules, each packhouse that is packing for export will be approved and licensed by MOA Quarantine and issued with a license number.

All fresh produce intended for export is received in such a manner that the phytosanitary status is not compromised.

The packing must take place in an insect proof environment, with no infested or rejected product within that environment.

PACKHOUSE REQUIREMENTS

SUPPLY

Each packhouse will maintain daily records detailing which growers have supplied produce for packing. The purchasing docket must record the grower crate numbers and volumes (kg).

STORAGE

Packed product and packaging are to be protected from pest contamination, from packing through to export.

Inspected 'lots' must be maintained in secured conditions. In ambient temperatures they must be segregated from non-inspected fresh produce by a minimum of 1 metre. In a cool-storage environment, inspected fresh produce must be segregated from non-inspected fresh produce by a minimum of 100 mm in all directions.

INSPECTION

The packhouse must inspect all fresh produce (100%) supplied by growers for export on a grower line basis for the presence of pests and diseases listed on the importing country's phytosanitary requirements and for compliance with the specified grade standard.

Note:
Pests are either Regulated pests such as Fruit Fly or Non Regulated pests. Whether the pest is Regulated or Non Regulated depends on the importing country's own pest status.

INSPECTION FAILURE

If a lot fails inspection, the exporter has the following options:

- Where the rejected lot comprises product from one packhouse from more than one grower, the offending grower's product may be removed. The balance of the lot may then be resubmitted for inspection, providing each grower line is re-inspected by MOA Quarantine (minimum sample per grower).
- Product that has failed an inspection cannot be sent for export.

INSPECTION FACILITIES

Must have a suitable work area, that is kept clean and free of other material or equipment and is clear of main traffic areas and other operations.

Must have a workbench of 2 metres by 1.2 metres minimum that is preferably white or light grey laminate.

Must have lighting directly over the inspection table of 1,000-lux minimum and access to an electric outlet.

MANAGEMENT

It is Managements responsibility to communicate directly with the MOA Quarantine on inspection arrangements and to organise “lots”.

Management has responsibility for ensuring adequate resources are available, including staff to assist with selection samples and resealing of cartons.

Management must have the ability to prepare documentation and keep an inventory.

RECORD KEEPING

Records are very important in this system, in order to maintain traceability and to assist in the audit and clarification regarding production and supply.

The type of records required include:

- Inspection Records
- Spraying Records
- Treatment Records
- Purchasing Records
- Grower Supply Records
- Load record
- Grower & registration
- Protein Bait supply & distribution record
- Transfer Records, etc.

All records will be maintained by the exporter and will be available for inspection at the packhouse by Fiji MOA Quarantine.

These records will also include the following information:

- Grower and site number identification
- Amount / exact quantity of fresh produce on a grower line basis.
- Date of receiving the fresh produce
- Date of grading
- Quantity of fresh produce rejected and reason(s)
- Quantity of fresh produce packed for export by variety, e.g.,
    - Quantity of mango, eggplant, breadfruit and pawpaw transferred to high temperature forced air chamber for quarantine treatment.
    - Quantity of Red Fire, Hot Rod and Birds Eye chillies packed for export

EXPORT SHED AUDIT REPORT

Accredited packhouses, cool stores and exporter's storage facilities shall be audited to verify that:

1. There is an effective system in operation at each packing facility that ensures that inspected and non-inspected fresh produce is kept separate and that appropriate measures are being taken to maintain phytosanitary integrity of the product;
2. Transport systems used for transporting inspected fresh produce from the packhouse/storage/ exporter's premises to the point of departure meet the transport requirements and retain phytosanitary integrity; and
3. The filing systems for reconciling inspected fresh produce with that which is presented for export are accurate.

Non-compliances identified during the audit will be discussed with the exporter. An appropriate corrective action will be agreed upon, which must be completed within an agreed time period. The corrective action will be checked after completion; if it still does not comply, then that exporter pathway will be penalised based on the critical situation on non-compliance.

MOA QUARANTINE PRODUCE INSPECTION AND TRANSFER

A MOA Quarantine inspector will undertake a thorough inspection of a 600-unit sample on a grower line basis after the packhouse staff have completed their grading and inspection.

Any non-conformity such as:

- Fruit Fly eggs, larvae and pupae
- Symptoms of Fruit Fly stages presence including: bruising, soft spots and skin punctures
- Infestation by other quarantine pests
- Decay and suspect fruit
- Incorrect maturity levels (e.g., ripe Red Fire, Hot Rod and Green Birds Eye)

will result in the fresh produce being rejected for export.

As a result of non-conformity during inspection, suspected farms will be traced back and audited. Corrective actions will be undertaken and these actions reviewed before approval to supply is reinstated.

MOA Quarantine Inspectors will maintain records of all inspections including:

- Inspection date
- Name of grower
- Name of exporter
- Quantities of Export Fresh Produce submitted for export
- Inspection results and action taken
- Details of mango, eggplant, breadfruit, pawpaw for transfer to HTFA chamber and quantity of birds eye, red fire and hot rod inspected

MOA Quarantine Inspector will complete and sign a transfer slip/ form for the mango, eggplant, pawpaw, breadfruit which has been passed.

MOA Quarantine Inspector will check the packed chillies, stamp and issue a Phytosanitary Certificate for export with accompanying declarations.

The exporter will ensure the produce is transferred promptly to HTFA in well secured grower numbered bins / packages/ containers with a completed load sheet and .transfer slip/ form.

PACKHOUSE INSPECTION CHECK LIST

Exporters Name : .....

Address : ……..

Telephone / Fax : ……..

PLEASE TICK THE APPROPRIATE BOX

		Very Good.	Good.	Adequate.	Poor.	Very Poor.
1.	Location					
	Establishment / area free from objectionable odors, smoke, dust or other contaminants and are not subject to flooding.	☐	☐	☐	☐	☐
2.	Roadways.					
	Roadways serving the establishment / Packhouse should have hard paved surface suitable for wheeled traffic.	☐	☐	☐	☐	☐
3.	Building & Facilities					
	Office	☐	☐	☐	☐	☐
	Adequate Ventilation	☐	☐	☐	☐	☐
	Adequate Space	☐	☐	☐	☐	☐
	Hygiene	☐	☐	☐	☐	☐
	Lighting	☐	☐	☐	☐	☐
	Drainage	☐	☐	☐	☐	☐
	Waste Disposal	☐	☐	☐	☐	☐
	Water Supply	☐	☐	☐	☐	☐
	Safety	☐	☐	☐	☐	☐
	Practicality	☐	☐	☐	☐	☐
	Services	☐	☐	☐	☐	☐
	Security	☐	☐	☐	☐	☐
	Fruit Fly Free Screening	☐	☐	☐	☐	☐
	Cooler / Freezer	☐	☐	☐	☐	☐

	Very Good.	Good.	Adequate.	Poor.	Very Poor.
Inspection Tables / Benches	☐	☐	☐	☐	☐
Scales	☐	☐	☐	☐	☐
Pailer & Trays	☐	☐	☐	☐	☐
Wash Basins	☐	☐	☐	☐	☐
Rubbish Bins	☐	☐	☐	☐	☐
Magnifying Glass	☐	☐	☐	☐	☐
Pest Sample Container	☐	☐	☐	☐	☐
Exporter Quality System	☐	☐	☐	☐	☐
Employees Training & Experience	☐	☐	☐	☐	☐
Floor	☐	☐	☐	☐	☐
Personal hygiene facilities and Toilets	☐	☐	☐	☐	☐
Storage (cleaning material, ingredients; non food chemicals).	☐	☐	☐	☐	☐
Control of Food Hazards (HACCP)	☐	☐	☐	☐	☐
Packaging (Cartons / Bags)	☐	☐	☐	☐	☐
Pest Control System	☐	☐	☐	☐	☐
Waste Management	☐	☐	☐	☐	☐
Health Status (Workers)	☐	☐	☐	☐	☐

Authorizing Officer :

Comments & Recommendation : _____

_____

_____

_____

_____

_____

_____

_____

_____ .

Name : .....

Signature : ..... Date : .....

PACKHOUSE DESIGN AND FACILITIES

1.0 Location

Establishments should be located in areas free of objectionable odours, smoke, dust and other contaminants and that are not subject to flooding.

2.0 Roadways and Areas used by Wheeled Traffic

Roadways and areas serving the establishment/packhouse that are within its boundaries or in its immediate vicinity should have a hard paved surface suitable for wheeled traffic. There should be adequate drainage, and provision should be made to allow for cleaning.

3.0 Buildings and Facilities

3.1 Building and facilities should be of sound construction and maintained in good repair.

3.2 Adequate working space should be provided to allow for satisfactory performance of all operations.

3.3 The design should be such as to permit easy and adequate cleaning and to facilitate proper supervision of food hygiene.

3.4 The buildings and facilities should be designed to prevent the entrance and harboring of pests and the entry of environmental contaminants such as smoke, dust, etc.

3.5 Buildings and facilities should be designed to provide separation, by partition, location or other effective means, between those operations, which may cause cross contaminations.

3.6 Buildings and facilities should be designed to facilities hygienic operations by means of a regulated flow in the process from the arrival of the raw material at the premises to the finished product, and should provide for appropriate temperature conditions for the process and the product.

3.7 In food handling areas:

Floors, where appropriate, should be of water-proof, non-absorbent, washable, non-slip and non-toxic materials, without crevices, and should be easy to clean and disinfect. When appropriate, floors should be sloped sufficiently for liquids to drain to trapped outlets.

Walls, where appropriate, should be of waterproof, non-absorbent, washable and non-toxic materials and should be light coloured. Up to a height appropriate for the operation they should be smooth and without crevices, and should be easy to clean and disinfect. When appropriate, angles between walls, between walls and floors, and between walls and ceilings should be sealed and covered to facilitate cleaning.

Ceilings should be so designed, constructed and finished as to prevent the accumulation of dirt and minimize condensation, mould development and flaking, and should be easy to clean.

Windows and other openings should be so constructed as to avoid accumulation of dirt and those which open should be fitted with screens. Screens should be easily movable for cleaning and kept in good repair. Internal window sills, if present, should be sloped to prevent use as sheaves.

Doors should have smooth, non-absorbent surfaces and, where appropriate be self-closing and close fitting.

Stairs lift cages and auxiliary structures such as platforms, ladders, chutes, should be so situated and constructed as not to cause contamination to food. Chutes should be constructed with inspection and cleaning hatches.

3.8 In food handling areas all overheads structures and fittings should be installed in such a manner to avoid contamination directly or indirectly of food and raw materials by condensation and drip, and should not hamper cleaning operations. They should be insulated where appropriate and be so designed and finished as to prevent the accumulation of dirt and to minimize condensation, mould development and flaking. They should be easy to clean.

3.9 Living quarters, toilets and areas where animals are kept should be completely separated from and should not open directly on food handling areas.

3.10 Where appropriate, establishments should be so designed that access can be controlled.

3.11 The use of materials, which cannot be adequately cleaned and disinfected, such as wood, should avoided unless its use would clearly not be a source of contamination.

4.0 Sanitary Facilities

4.1 Water Supply

An ample supply of water, pressure and of suitable quality be available with adequate facilities for its storage, where necessary, and distribution, and with adequate protection against contamination.

4.2 Drainage and waste disposal

Adequate drainage and waste disposal systems and facilities should be provided. They should be designed and constructed so that risk of contaminating food or the potable water supply is avoided.

4.3 Cleaning

Adequate facilities, suitably designated, should be provided fro cleaning food, utensils and equipment, such facilities should have adequate supply of hot and cold portable water where appropriate.

4.4 Personnel hygiene facilities and toilets

Personnel hygiene facilities should be available to ensure that an appropriate degree of personal hygiene can be maintained and avoid contaminating food. Where appropriate, facilities should include:

- Adequate means of hygienically washing and drying hands including wash basins and a supply of hot and cold for suitably temperature controlled water;
- Lavatories of appropriate hygienic design; and
- Adequate changing facilities for personnel

Such facilities should be suitably located and designated.

4.5 Temperature control

Depending on the nature of the food operations undertaken, adequate facilities should be available for heating, cooling, cooking, refrigerating and freezing food, for storing refrigerating and freezing food, for storing refrigerated or frozen foods, monitoring food temperatures, and when necessary, controlling ambient temperature to ensure the safety and suitability of food.

4.6 Air quality and ventilation

Adequate means of natural or mechanical ventilation should be provided, in particular to:

- Minimize air-borne contamination of food, for example, from aerosols and condensation droplets;
- Control ambient temperatures;
- Control odours which might affect the suitability of food, and
- Control humidity, where necessary, to ensure the safety and suitability of food.

Ventilation systems should be designed and constructed so that air does not flow from contaminated areas to clean areas and, where necessary, they can be adequately maintained and cleaned.

4.7 Lighting

Adequate natural or artificial lighting should be provided to enable the undertaking to operate in a hygienic manner. Where necessary, lighting should not be such that the resulting color is misleading. The intensity should be adequate tot eh nature of the operation.

4.8 Storage

Where necessary, adequate facilities for the storage of food, ingredients and non-food chemicals (e.g. cleaning materials, fuel) should be provided.

- Where appropriate, food storage facilities should be designed and constructed to :
- Permit adequate maintenance and cleaning;
- Avoid pest access and haborage;
- Enable food to be effectively protected from contamination during storage; and
- Where necessary, provide an environment, which minimizes the deterioration of food (e.g. by temperature and humidity control).

The type of storage required will depend on the nature of the food. Where necessary, separate, secure storage facilities for cleaning materials and hazardous substances should be provided.

5.0 Control of Food Hazards

Food business operators should control food hazards through the use of systems such as HACCP.

They should;

- Identify any steps in their operations which are critical to the safety of food;
- Implement effective control procedures at those steps;
- Monitor control procedures to ensure their continuing effectiveness; and
- Review control procedures periodically, and whenever the operations change.

These systems should be applied throughout the food chain to control food hygiene throughout the shelf-life of the product through proper product and process design.

Control procedures may be simple, such as checking stock rotation calibrating equipment, or correctly loading refrigerated display units. In some cases a system based on expert advice, and involving documentation, maybe appropriate. A model of such a food safety system is described in Hazard Analysis and Critical Control (HACCP) System and Guidelines for its application.

5.1 Physical and Chemical Contamination

Systems should be in place to prevent contamination of foods by foreign bodies such as glass or metal shards from machinery, dust, harmful fumes and unwanted chemicals. In manufacturing and processing, suitable detection or screening devices should be used where necessary.

5.2 Incoming Material Requirements

Now raw material or ingredient should be accepted by an establishment if it is known to contain parasites, undesirable micro-organisms, pesticides, veterinary drugs or toxic, decomposed or extraneous substances which would not reduced to an acceptable level by normal sorting and/or processing. Where appropriate, specifications for raw materials should be identified and applied.

5.3 Packaging

Packaging design and materials should provide adequate protection for products to minimize contamination, prevent damage and accommodate proper labelling.

Packaging materials or gases where used must be non-toxic and not pose a threat to the safety and suitability of food under the specified conditions of storage and use. Where appropriate, reusable packaging should be suitably durable, easy to clean and where necessary, disinfect.

6.0 Cleaning Procedures and Methods

Cleaning can be carried out by the separate or the combined use of physical methods, such as heat, scrubbing, turbulent flow, vacuum cleaning or other methods that avoid the use of water and chemical methods using detergents, alkalis or acids.

- Cleaning procedures will involve, where appropriate;
- Removing gross debris from surfaces;
- Applying a detergent solution to loosed soil and bacterial film and hold them in solution or suspension;
- Rinsing with water which complies with section to remove loosened soil and residues of detergent.
- Dry cleaning or other appropriate methods for removing and collecting residues and debris; and
- Why necessary, disinfection.

6.1 Cleaning Program

Cleaning and disinfection programs should be continually and effectively monitored for their suitability and effectiveness and where necessary, documented.

Where written cleaning programs are used, they should specify:

- Areas, items of equipment and utensils to be cleaned;
- Responsibility for particular tasks;
- Method and frequency of cleaning and
- Monitoring arrangements.

Where appropriate, programs should be drawn up in a consultation with relevant specialist expert advisors.

6.2 Pest Control Systems

6.2.1 General

Pests pose a major threat to the safety and sustainability of food. Pest infestations can occur where there are breeding sites and supply of food. Good hy6giene practices should be employed to avoid creating an environment conductive to pests. Good sanitation, inspection of incoming materials and good monitoring can minimize the likelihood of infestation and thereby limit the need for pesticides.

6.2.2 Preventing Access

Building should be kept in good repair and condition to prevent pest access and access and to eliminate potential breeding sites. Holes, drains and other places where pests are likely to gain access should be kept sealed. Wire mesh screens, for example on open windows, doors and ventilators, will reduce the problem of pest entry. Animals should, wherever possible, be excluded from the grounds of factories and doors processing plants.

6.2.3 Harboring and Infestation

The availability of food and water encourage pest harborage and infestation. Potential food sources should be stored in pest-proof containers and/or stacked above the ground and away from walls. Areas both inside and outside food premises should be kept clean. Where appropriate, refuse should be stored in covered, pest-proof containers.

6.2.4 Monitoring and Detection

Establishments and surrounding areas should be regularly cleaned for evidence of infestation.

6.2.5 Eradication

Pest infestation should be dealt with immediately and without adversely affecting food safety or suitability. Treatment with chemical, physical or biological agents should be carried out without posing a threat to safety of suitability of food.

6.3 Waste Management

Suitable provision must be made for the removal and storage of waste. Waste must not be allowed to accumulate in food handling, food storage, and other working areas and the adjoining environment except so far as is unavoidable for the proper functioning of the business.

Wastes stores must be kept appropriately clean.

6.4 Monitoring Effectiveness

Sanitation systems should be monitored for effectiveness, periodically verified by means such as audit pre-operational inspections or, where appropriate, microbiological sampling of environment and food contact surfaces and regularly reviewed and adapted to reflect changed circumstances.

6.5 Health Status

People known, or suspected, to be suffering from, or to be a carrier of a disease or illness likely to be transmitted through food, not be allowed to enter any food handling areas if there is a likelihood of their contamination food. Any person so affected should immediately report illness or symptoms of illness to the management.

Medical examination of a food handler should be carried or if clinically or epidemiologically indicated.

6.6 Illness and Injuries

Conditions which should be reported to be reported to management so that any need for medical examinations and/or possible exclusion from food handling can be considered include:-

- Jaundice
- Diarrhoea
- Vomiting
- Fever
- Sore throat with fever
- Visibly infected lesions (boils, cuts, etc)
- Discharges from the ear, eye or nose.

6.7 Personal Cleanliness

Food handlers should maintain a high degree of personal cleanliness and, where appropriate, wear suitable protective clothing, head covering and shoes.

Cuts and wounds, where personnel are permitted to continue protecting and covered by waterproof bandages.

NOTES

SKILL CHECK

1. What type of environment must the packing take place in?

_____

_____

2. Inspected Lots must be maintained in secure conditions. What is the segregated distance?

_____

3. The packhouse Quality Control must inspect all fresh produce 100% supplied by growers.

   (a) On what basis? _____

   (b) For the presence of pests and diseases listed where?

   _____

4. What must the inspection facility have?

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

5. What type of records are required?

_____

_____

_____

_____

_____

_____

6. Accredited packhouses, cool stores and exporter's storage facilities are audited to verify what?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Systems Approach to Fresh Produce Exports Training

Module 7:

INSPECTION

TOPIC: INSPECTION

Session Time 60 minutes

LEARNING OUTCOME

By the end of this session participants will be able to understand the importance of inspection to achieve the importing country's phytosanitary requirements:

- Through taking the correct sample
- Inspecting fresh produce
- Making the correct decisions

This will ensure that produce arrives at its market:

- Without quarantine pest interceptions
- Satisfying the Importing Country's Phytosanitary requirements.
- Without Micobiological, physical or chemical contamination
- Thus maintaining confidence in our inspection processes & products

RESOURCES

- Pest identification photographs and charts

INTRODUCTION

The issue of quality is only peripheral to quarantine, in that if quality is good it is usually free of pests and soil and this obviously facilitates trade.

Quality produce must always be the target in order for the industry to be sustainable over the longer term.

Exporters and NPPO have a primary role to play in establishing quality standards but it must be emphasized that it is the buyer who is the final arbiter of quality.

Sampling and Inspection

A sample of fruit will be taken at random throughout the lines and will be inspected according to the requirements of Fiji MAF. Inspection techniques and sampling systems will be equivalent to the importing country's requirements.

The criteria used by inspection staff to pass or fail a line will be in accordance with Maximum Pest Limits (MPL's), in the Quarantine Tables provided by the Director Fiji MAF Plants.

The packhouse manager will ensure that inspection staff are familiar with the recognition of pests where an additional declaration through inspection is specified by the importing country.

Access to resource materials (photos) will be available at the inspection area.

If any doubt exists over the identification of a pest, the decision will be made as to whether or not the line will be redirected to a market for which it will not have an effect (i.e., the local market) or a hold will be put on that line until positive identification has been made.

Produce that does not conform will be segregated from conforming product.

Inspection Resources

Inspectors will maintain suitable facilities to permit the performance of all necessary activities associated with inspection:

- Safety: The Health and Safety of inspectors.
- Hygiene: Clean so as not to present a contamination risk to produce.
- Security: Not be subject to any risk of substitution or mixing.
- Space: Adequate area available for inspection and storage.
- Lighting: Shall be a minimum of 1000 lux at the point which product is inspected.
- Serviced: Labour and other necessary facilities available.
- Location: Depending on the type of produce - near cool stores, or transport.

The following equipment is available for use by the inspection staff:

- Copy of Export Specifications (Maximum Pest Limit Tables)
- Accurate metric scales within +/-0.5%
- Magnifying glass (10x minimum)
- Containers for pests for identification
- Record Sheets and filing system.

Sampling Method

A sample of the product shall be taken at random from throughout a predetermined Homogeneous Line and inspected to ensure that the required Specifications have been met.

The sample must be selected on completion of packing a carton and be representative of the lot. The Inspector must draw cartons from different parts of the line.

The decision on the sample size must be taken prior to sampling and the selection of cartons to be inspected must be made prior to the commencement of the inspection.

Sampling plans implemented for export shall provide at least the equivalent level of risk protection as those known to be applied in the importing country.

Where there is no known sampling plan, the sampling plan shall provide at least a 95% confidence level that the required specifications are met.

A product sample is a minimum of 100 units of product examined within every 3/4 of an hour during packing with the first sample taken within 15 minutes of commencement of a line.

The Acceptance Numbers: MPL = 0.5% enable a decision to be made relating to sample size.

Quarantine will inspect 450 for less than 1000 units and 600 for more than 1000 units (agreed NZMAF & Fiji MOA sample sizes)

Inspection Method

Inspection of Packaging

Inspect the packaging and pallets to ensure that they are new, clean and free from pest contamination.

Any pest found in the packaging is to be counted as a defective unit of product.

Ensure that the labels contain correct information.

General Techniques

Inspections are to be carried out with the naked eye using a 10x hand lens to confirm identification of pests.

Produce in loose cartons/crates - the whole package containing the product is to be inspected.

Produce in punnets - take the punnets out of the tray and examine the bottom of the tray for pests that may have fallen through the small holes in the bottom of the punnet.

- Each fruit must be removed from the carton and carefully examined for conformity to cosmetic grade standards and disease status.
- The fruit must be rotated 360 degrees so as the total area of the fruit is observed.
- Examine the calyx and stem ends carefully for pests and disease harboring in these areas.
- Remove any foreign debris from these areas with a probe, brush or knife point.
- Any puncture marks, chewing's or sooty mould in the stem or calyx may indicate the presence of insect pests in the fruit.
- Where there is clear evidence of internal pests, the fruit may be cut open to confirm the level of infection.
- When pests are found on fruit these must be clearly identified into one of the MPL categories.

NOTE: If doubt exists over identification, samples are to be sent for identification.

Sorting / Grading

Decision Criteria

The criteria used by inspection staff to pass or fail any line of inspected product destined for export is based on the Quality Control Record Sheets.

If the individual or cumulative totals per sample require a rejection, produce must be segregated from conforming product. The combination of MPL (Maximum Pest Level) and MGDL (Maximum Grade Defect Levels) are defined on the Quality Control Record Sheet.

The MRL (Maximum Residue Level) for produce is monitored and the supplier must provide Spray Diary information.

Classification Of Pests

NPPO's maintain pest lists for some of the major crops exported from and on behalf of the exporters involved. They are lists of all pests & diseases that have been found on the plants exported.

The lists are sent to importing countries for them to identify any organisms that are considered quarantine pests and that they will take action on.

Exporters and certification agencies use the pest lists during Phytosanitary Inspection to determine the maximum pest limits (MPL) for a consignment.

MPL = Maximum Pest Limit.

The maximum pest limit is the maximum percentage of plants or plant products infested with pests acceptable within each lot inspected.

Positive identification is required if any doubt exists over the identification of a pest.

Until positive identification is reached the line is considered to have failed inspection.

Control Of Non-Conforming Product

Product that does not conform to specified requirements will be marked as "**REJECTED**" and will be segregated from conforming product and not put forward for Certification.

As soon as the produce is marked "**REJECTED**" this ensures that the product will not be put forward for Export.

Examples of Rejected Product

Rejected Breadfruit

Insect Damage in the field

Rejected Eggplant

Inspection Records

During produce inspection, any fresh produce that does not conform to the quality and phytosanitary requirements of the importing country is rejected. Details must be recorded by the Exporter and MOA Inspector after completing the inspection process.

This record is maintained for the purpose of trace back auditing in the case of any critical non-compliance interception. This record will also assist in Phytosanitary decision making with regard to corrective action(s) required.

See examples of the forms used below:

Inspection Register by Exporter on Pawpaw

Date	G/ name	G/#	Var	Qtty Rec	Qtty Rej	Qtty pass	Unit insp	No grder	Time	Pest found	Non Conform'	Action taken	FQID Sign stamp
4/05/05	Jone	12	Sunrise	900	10	890	600	4	2hrs	nil	shape	reject	

Format used by FQID Inspectors

Date	Exporter Name/ no	G/ name	G/#	Var	Qtty Rec	Qtty Rej	Qtty pass	Unit insp	Time	Pest found	Non Conform'	Action taken	FQID Sign stamp
4/05	IFS	Jone	12	Sunrise	890	20	870	600	3hrs	White spots	Shape	reject	

NOTES

SKILL CHECK

1. When a fruit sample is taken at random for inspection what are the equivalent system requirements?

_____

_____

2. What must the packhouse manager ensure?

_____

_____

3. What must be maintained to ensure suitable facilities for inspection?

_____

_____

_____

_____

_____

_____

4. What equipment must be available for use by the inspection staff?

_____

_____

_____

_____

5. What are the general inspection techniques?

_____

_____

_____

_____

_____

_____

_____

6. Product that does not conform to specified requirements should be?

_____

_____

_____

_____

_____

_____

_____

Systems Approach to

Fresh Produce Exports

Training

Module 8:

POST INSPECTION PRODUCT SECURITY

TOPIC: POST INSPECTION PRODUCT SECURITY

Session Time: 120 minutes

LEARNING OUTCOME

By the end of this session participants will understand the importance of Post Inspection Product Security.

- Identify the Post Inspection Product Security procedures you need to have in place
- Be able to document requirements for an exporter system

INTRODUCTION

Fiji exports horticultural products to several important markets. This gives rise to a number of operators (exporters) and systems to prepare or handle product through the supply chain to the point of export. This module provides guidance to exporters in the implementation of post inspection product security (PIPS) requirements.

Product in packaging that is not pest proof is vulnerable to infestation by quarantine pests during transportation and storage. We need to consider how such product can be handled to minimise the risks of infestation and substitution.

The fresh produce that will be heat treated or subject to treatment prior to export has less emphasis on the supply chain from packhouse to Treatment Centre. The critical component is Post Treatment Security.

Transport operators may form part of an exporter's system by operating procedures on their behalf. We need to consider the procedures used to record the movement of product as it moves from each point in the supply chain and what will provide the traceability paper trail.

For example:

1 The transport company and driver name on each load record leaving the packhouse

2 A consignment delivery confirmation for each consignment received at the Treatment Centre or export point.

POST INSPECTION PRODUCT SECURITY PROCESS

The process for Post Inspection Product Security involves 5 steps:

Step 1 Identify the Security Risk Points
Undertake an assessment of your supply chain to ensure the phytosanitary security of consignments (i.e., composition, substitution and infestation) is maintained after inspection to the point of certification and export.

Step 2 Document the Security Procedures
Develop and document phytosanitary security procedures at each stage of your supply chain following inspection/certification.

Step 3 Implement the Security Procedures

Step 4 Communications
Communicate your phytosanitary security procedures to other operators involved in your post-inspection/ certification supply chain.

Step 5 Verify
Ensure that your security procedures are implemented correctly in your operation and other operators in your supply chain operate in compliance with your procedures.

Step 1

Identify Post Inspection Product Security responsibilities by assessing the Post Inspection Product Pathway

As a means of gaining a full appreciation of the environment fresh produce is subjected to after it has been inspected, examine the pathway the product takes through to the point of export. Identify the critical points in the pathway where opportunity for substitution or contamination exists.

The following set of questions may help you examine critical points in the post inspection fresh produce export supply chain.

Is the product protected from pest contamination following inspection?

Protection may include cool-storage, enclosing product in plastic bags, Insect proof mesh on cartons or shrink-wrapped pallets etc.

How is the product secured from substitution/mixing with non-inspected product?

Securing product from substitution could be achieved by separating inspected and non-inspected product into different areas of the operation or roping off with ‘safety tape’.

How is security of the product as it moves beyond inspection to the point of export managed?

If your export product in non-pest proof containers, identify where risks of pest contamination and substitution may occur and develop procedures you need to put in place to ensure those risks are minimised.

For example, you may need to specify that unprotected pallets and bins are transported in pest proof trucks. Or when loading out of store at night, you may need to put specific “hitch hiker” pest protection in place to ensure that pests attracted to the lights do not infest the product.

Who has access to the product during the transport and storage stages up to the point of export?

If you have chosen to use the services of other operators in your Post Inspection Product Pathway, you will still have responsibility for security of your product at all stages following inspection through to the point of export or transfer to HTFA.

This is necessary for export certification to work effectively.

What instructions have been provided to contracted parties (e.g. storage and transport operators, freight forwarders or port / airport facilities etc.) as a means of minimising the risk of substitution and contamination of the product?

Individual staff within other organisations contracted to undertake Post Inspection Product Security procedures (e.g. storage, freight forwarding, stowing on ship, etc) may become accredited under the exporters system. Those staff will be subject to audit as part of the routine compliance auditing of a Fresh Produce Export System.

Note: When using non-accredited organisations, the phytosanitary certification status of a consignment will be lost when:

> The staff person(s) accredited under your operator system fails to confirm that the activities (e.g. product stowed/loaded onto vessels or into containers and the containers sealed) were undertaken in compliance with your procedures.

Are Post Inspection Product Security procedure instructions to contracted organisations documented, contractually agreed and available to the appropriate people?

Just as documented procedures and processes need to be implemented by your personnel, the same applies to non-accredited operators who receive your product.

Consider how your organisation (e.g. at packhouse or storage facility level) knows or is able to trace back and **confirm** the following when product is loaded out from your facilities:

1. Only product that has undergone phytosanitary inspection and passed for the appropriate destination is loaded onto a transport carrier (either accredited or non accredited),

2. A record has been made of the load out details (e.g. by crop type the unique post inspection reference details on packaging such as boxes, cartons and or pallets (e.g. pallet card numbers), name of transport carrier, export destination of product, etc),

3. The record contains the name and contact details of a member of your staff responsible for communicating with and clarifying load out information to your:

(i) Receiving operator (e.g. transport carrier),
(ii) MOA Export documentation personnel.

How are export documentation personnel (or inspector/load out verifier) kept up to-date with consignments load-out details?

For example, the identification of crate, box, pallet card numbers for each container or vessel loaded, destination and a person to contact if there is a need to clarify some aspect etc.

Who manages any breaches in the Post Inspection Product Security System and how are breaches managed?

Consider how you would deal with a situation. PIPS breaches include unauthorised breaking of container seals, movement of product from vehicles into containers or exchanged between containers etc without the supervision of MOA accredited personnel.

Step 2

Documenting Your PIPS Procedure

Analyse your findings from the above self-answered questions. You may find the following example useful to develop your PIPS procedures for inclusion in your Export System. Ensure you clearly describe who in your organisation does what, where, when and how.

Example Of A Documented Post Inspection Product Security Procedure

Purpose:

To maintain the integrity (i.e. to prevent pest contamination and substitution with non-inspected product) of the phytosanitary certification status of product inspected and passed for export

Scope:

Product identified as being in compliance with an importing country's phytosanitary requirements.

Responsibility:

Insert person responsible

Actions:

Describe the actions you implement to prevent product becoming infested with pests immediately after phytosanitary inspections are undertaken and during subsequent storage and transport through the supply chain to the point of export

1 How you prevent product from being substituted at any time between phytosanitary inspections that confirm the product meets the importing country phytosanitary requirements have been undertaken and during subsequent storage and transport through the supply chain to the point of export.

2 How your inspector or load out verifier **confirms** the plant products being stowed into export containers (sea or aircraft container) have been inspected and passed for the appropriate export market destination,

3 Where a country imposes a time limit between inspection and export (refer ICPR or Import Permit), describe how this is monitored and implemented.

4 Describe how and when product security is monitored at storage facilities. Attach a copy of the record maintained of these checks.

5 If you transfer responsibility for post inspection product security to another operator, describe how and when this is confirmed with the receiving operator.

6 Describe the system used to notify the MASLR of the details and status of product when submitting a request for verification of a phytosanitary certificate.

7 Describe actions you undertake when your post inspection product security procedures are breached.

Maintaining The Integrity Of Export Product Through The Treatment Process

Timely transportation to the treatment facility from the Exporter Shed is important to avoid deterioration.

Supportive documents must accompany produce passed for treatment.

Post-treatment security begins from the time produce has been treated until it is air-freighted.

Treatment facility workers must employ precautionary measures while grading, packing, labelling and loading of treated commodities to avoid contamination or re-infestation.

Monitoring of the Freight Forwarders prevents contamination or re-infestation of product during the processes from the point of Inspection to the point of Export.

The following processes are monitored:

- unloading from the chamber,
- operational shutdown procedures,
- post-treatment grading and packing,
- labelling,
- inward movement of airline containers,
- loading of containers,
- outward movement of containers,
- issue of phytosanitary certificates,
- post-treatment security.

In addition, Quarantine Inspectors supervise any mix loading of treated produce with other commodities.

If Freight Forwarders store the product, it is held in their cool store, which ensures that the products are safe from contamination or re-infestation.

If contamination or re-infestation were to occur the pallets would be marked "**REJECTED**" and the procedure for 'Non Conforming Product' would apply.

Transfer Form

During the completion of every inspection, at any exporters' packhouse, where Quarantine Inspectors are satisfied with the quality and phytosanitary status of the commodity, the Quarantine Inspector completes the Transfer Form to accompany the inspected produce to the Quarantine treatment facility (HTFA) for treatment.

Information included in the form is: the names of the growers, grower registered number, variety of the commodity, number of bins per single variety, field bin numbers and additional remarks by inspector signed and stamped.

The transfer and grower supply records are important tools that give the Quarantine Officer, based at the treatment plant, the details of the pre harvest and post harvest activities, that have been carried out to prove that they comply with Phytosantiary requirements.

Example of Transfer Form

Date	Exporter Name Number	Registered Growers	Grower Number	Locality	Variety	Bins Numbers	Quantity Pass
4/5	IFS	Jones	12	Bila	Sunrise	1-50 (50 bins)	870

Declaration

The above has be inspected and passed for Quarantine Treatment:

Quarantine Inspector: _____

Signature: _____

Date: _____

Stamp:

Numbered Field bins

Field bins used during purchasing by exporters should be numbered properly.

Identity of the supplier (company initials), number of bins / counts
must be maintained until the commodities reach the HTFA. These ensure compliance in the homogeneity of a single commodity.

The bin is maintained and ensured free of any chemical contamination and durable to handle weight.

Pre-Treatment Grading

Only mango, eggplant, breadfruit and pawpaw that have been properly graded by the exporter staff, inspected by quarantine staff, covered by a transfer form / slip, will be received at the HTFA Chamber for treatment.

TREATMENT

A high temperature forced air (HTFA) treatment has been proven to be an effective Fruit Fly disinfestations treatment in accordance with NZMAF Regulatory Authority Standard 155.02.03: Specification for the Determination of Fruit Fly Disinfestation of Bactrocera passiflorae and Bactrocera Xanthodes in the Cook Islands by B. C. Wadell, G K Clare, JH Maindonald and R.J Patry dated 24th April 1996.

Data set for High Temperature Studies (Tephritidae) in Fiji (Research Division of MAFF & ALTA) confirmed that most heat tolerant species in Fiji (Bactrocera passiflora) was less heat tolerant than the fruit species in the Cook Islands.

Accordingly, the Cook Islands Specification was approved for use on papaya in Fiji.

Approved Commodities covered by Appendix 4 – HTFA are as follows:

- **Papaya** *[Carica papaya]*

- **Eggplants** *[Solanum melongena]*

- **Mangoes** *[Mangifera indica]*

- **Breadfruit** *[Artocarpus altilis]*

Treatment Specification

High Temperature Forced Air (HTFA) Quarantine Treatment Chamber

Follow exactly as prescribed in the "Quarantine Procedures Manual for the Operation of Commercial Heat Treatment Chamber, MOA, Nadi Airport, and Revised March 2001.

Currently our Quarantine Inspectors are trained and certified as the operator of HTFA and another are posted to ensure compliance on the Quarantine Procedures for Operation Of Commercial Heat Treatment Chamber (Revised in March 2001).

The treatment is achieved by heating the fruit / vegetables in bins / lugs with high temperature forced air.

Successful Quarantine treatment occurs when a specific time – temperature combination is achieved and when certain operating procedures are correctly performed.

All calibration probes must reach a temperature of 47.2 degrees and continue for 20 minutes before hydro cooling starts.

The Unit consists of two chambers. Each chamber can hold 4 treatment bins / 120 lugs of commodities [maximum] (one bin = 250 to 400 kg or 1 lug = 10 to 15 kg of produce).

Both chambers can be operated at the same time and or independently of each other. This allows flexibility for treating various load sizes.

A computer intech program written in Visual basic provides the control of the system. Operation of the unit is through an Acer and Gateway compatible computer and an Omega data acquisition set.

Traceback System

In order to maintain traceability and create an effective trace back system, the following is the minimum requirement for labelling and documentation:

- Ensure all suppliers of exported commodities are registered with Fiji Quarantine and have a valid grower number.
- Record and maintain details of all inspections and treatment.
- Ensure that a Grower identity number and treatment batch code appear on every package packed for export.

All stakeholders and MOA staff involved in the Post Inspection and Treatment Security within the export system will be audited to ensure that trace back is possible.

NOTES

SKILL CHECK

1. What is product security and why is it important?

_____

_____

_____

2. What documents need to accompany commodities passed for treatment?

_____

_____

3. What is the minimum requirement for labelling and documentation to provide an effective trace back system?

_____

_____

_____

4. What type of treatment is HTFA?

_____

_____

_____

_____

_____

5. Product in packaging that is not pest proof is vulnerable to what?

_____

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_____

6. The post inspection product security process has 5 steps. What are they?

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_____

Systems Approach to Fresh Produce Exports Training

Module 9:

PHYTOSANITARY CERTIFICATION

TOPIC: PHYTOSANITARY CERTIFICATION

Session Time 60 minutes

LEARNING OUTCOME

- Understand the purpose of Phytosanitary Certificates
- Know the Phytosanitary regulation
- Implement the correct procedures

INTRODUCTION

International standards for phytosanitary measures are prepared by the Secretariat of the International Plant Protection Convention. This is a part of the United Nations Food and Agriculture Organization's global programme of policy and technical assistance in plant quarantine.

The programme makes available to FAO Members and other interested parties the standards, guidelines and recommendations to achieve international harmonization of phytosanitary measures, with the aim to facilitate trade and avoid the use of unjustifiable measures as barriers to trade.

The Purpose of Phytosanitary Certificates

Phytosanitary Certificates are issued to indicate that consignments of plants, plant products or other regulated articles meet specified phytosanitary import requirements and are in conformity with the certifying statement of the certificate. Phytosanitary Certificates should only be issued for this purpose.

Certificates provide a standard wording and format that should be followed for the preparation of official Phytosanitary Certificates. This is necessary to ensure the validity of the documents, that they are easily recognized, and that essential information is reported.

Importing countries should only require Phytosanitary Certificates for regulated articles. These include commodities such as plants, bulbs and tubers, or seeds for propagation, fruits and vegetables, cut flowers and branches, grain, and growing medium.

Phytosanitary Certificates may also be used for certain plant products that have been processed where such products, by their nature or that of their processing, have a potential for introducing regulated pests (e.g., wood, cotton).
A Phytosanitary Certificate may also be required for other regulated articles where phytosanitary measures are technically justified (e.g., empty containers, vehicles, and organisms).

Importing countries should not require Phytosanitary Certificates for plant products that have been processed in such a way that they have no potential for introducing regulated pests, or for other articles that do not require phytosanitary measures.

NPPOs should agree bilaterally when there are differences between the views of the importing country and exporting country regarding the justification for requiring a Phytosanitary Certificate.

Changes regarding the requirement for a Phytosanitary Certificate should respect the principles of transparency and non-discrimination.

Phytosanitary Regulation

Phytosanitary Regulation is any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests [FAO, 1995; revised IPPC, 1997]

Or, an Official rule to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests, including establishment of procedures for phytosanitary certification [FAO, 1990; revised FAO, 1995; CEPM, 1999; ICPM, 2001]

The establishment, recognition and application by different countries of phytosanitary measures are based on common standards issued in 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures.

The issuing of Official documents authorizing importation of a commodity in accordance with specified phytosanitary requirements is based on:

1. Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations [FAO, 1990; revised FAO, 1995; formerly **Inspect**]

2. International Standard for Phytosanitary Measures [CEPM, 1996; revised ICPM, 2001]

3. Official service established by a government to discharge the functions specified by the IPPC National Plant Protection Organization [FAO, 1990; revised ICPM, 2001]

4. Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products [FAO, 1990; revised FAO, 1995; IPPC, 1997]

5. An area in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained [FAO, 1995]

6. Place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period [ISPM Pub. No. 10, 1999]

7. A defined portion of a place of production in which a specific pest does not occur as demonstrated by scientific evidence and in which, where appropriate, this condition is being officially maintained for a defined period and that is managed as a separate unit in the same way as a pest free place of production [ISPM Pub. No. 10, 1999]

8. Certificate patterned after the model certificates of the IPPC [FAO, 1990]

General Considerations

Inspection and other related activities leading to issuance of Phytosanitary Certificates shall be carried out only by, or under the authority of, the official national plant protection organization.

The issuance of Phytosanitary Certificates shall be carried out by public officers who are technically qualified and duly authorized by the official national plant protection organization to act on its behalf and under its control with such knowledge and information available to those officers that the authorities of importing contracting parties may accept the phytosanitary certificates with confidence as dependable documents. [Refer to ISPM No. 7, Export certification system]

Each contracting party undertakes not to require consignments of plants or plant products or other regulated articles imported into its territories to be accompanied by phytosanitary certificates inconsistent with the models set out in the Annex to this Convention. Any requirements for additional declarations shall be limited to those technically justified.

Mode of Issue

The Phytosanitary Certificate is an original document, or under specific circumstances, is a certified copy issued by the NPPO, that accompanies the consignment and is presented to the relevant officials upon arrival in the importing country.

Alternatively, electronic certification may be used provided that the mode of issue and security is acceptable by the importing countries, the information provided is consistent with the appropriate model(s), the intent of certification under the IPPC is realized and the identity of the issuing authority can be adequately established.

Attachments

Official attachments to the Phytosanitary Certificate should be limited to those instances where the information required to complete the certificate exceeds the available space on the certificate.

Any attachments containing phytosanitary information should bear the Phytosanitary Certificate number, and should be dated, signed and stamped the same as the Phytosanitary Certificate.

The Phytosanitary Certificate should indicate, in the appropriate section, that the information belonging in that section is contained in the attachment.

The attachment should not contain any information that would not be put on the Phytosanitary Certificate itself, had there been enough space.

Unacceptable Certificates

Importing countries should not accept certificates that they determine to be invalid or fraudulent. The issuing authorities should be notified as soon as possible regarding unacceptable or suspect documents (Refer to ISPM 13: *Guidelines for the notification of non-compliance and emergency action*).

The NPPO of the exporting country should take corrective action when necessary and maintain systems for vigilance and security to ensure that a high level of confidence is associated with Phytosanitary Certificates issued by that authority.

Invalid Phytosanitary Certificates

Reasons for rejecting a Phytosanitary Certificate and/or for requesting additional information include:

- Illegible or incomplete period of validity
- Expired or not complied with
- Inclusion of unauthorized alterations
- Erasures
- Inclusion of conflicting or inconsistent information
- Use of wording that is inconsistent with the model certificates
- Certification of prohibited products
- Non-certified copies

Fraudulent Certificates

Fraudulent certificates include those:

- Not authorized by the NPPO
- Issued on forms not authorized by the issuing NPPO
- Issued by persons or organisations or other entities that are not authorized by the NPPO
- Containing false or misleading information.

Requirements Made by Importing Countries with respect to Preparation and Issue of Phytosanitary Certificates

Importing countries frequently specify requirements that should be observed with respect to the preparation and issue of Phytosanitary Certificates.

They commonly include:

- Language (countries may require that certificates be completed in a specific language or one of a list of languages -- countries are encouraged to include one of the official languages of FAO)
- Period of Validity (importing countries may specify the period of time allowed for issue following inspection and/or treatment, dispatch of the consignment from the country of origin following issue, and validity of certificate)
- Completion (countries may require that the certificate is completed by typing, or in handwritten legible capital letters)
- Units (countries may require that the description of the consignment and quantities declared should be done in specified units).

Specific Principles and Guidelines for Preparation and Issue of Phytosanitary Certificates

Phytosanitary certificates and phytosanitary certificates for re-export should include only information related to phytosanitary matters. They should not include statements that requirements have been met and should not include references to animal or human health matters, pesticide residues or radioactivity, or commercial information such as letters of credit.

To facilitate cross-referencing between the phytosanitary certificates and documents not related to phytosanitary certification (e.g., letters of credit, bills of lading, CITES certificates), a note may be attached to the phytosanitary certificate which associates the phytosanitary certificate with the identification code, symbol or number(s) of the relevant document(s) which require cross-referencing. Such a note should only be attached when necessary and should not be considered an official part of the phytosanitary certificate.

All components of the phytosanitary certificates and phytosanitary certificates for re-export should normally be completed. Where no entry is made, the term "None" should be entered or the line should be blocked out (to prevent falsification).

Requirements for completing the phytosanitary certificate

(Headings in bold refer to the components of the model certificate)

The specific components of the phytosanitary certificate are explained in the following section.

No. _____
This is the certificate identification number. It should be a unique serial number associated with an identification system that allows "trace-back", facilitates audits and serves for record keeping.

Plant Protection Organization of _____
This component requires the name of the official organization and the name of the country that is issuing the certificate. The name of the NPPO may be added here if it is not part of the printed form.

TO: Plant Protection Organization(s) of _____
The name of the importing country should be inserted here. In cases where the shipment transits through a country which has specific transit requirements, including the need for phytosanitary certificates, the names of both importing country and country of transit may be inserted. Care should be taken to ensure that the import and/or transit regulations of each country are met and appropriately indicated. In cases where the shipment is imported and re-exported to another country, the names of both importing countries may be inserted, provided the import regulations of both countries have been met.

Section I. Description of Consignment

Name and address of exporter: _____
This information identifies the source of the consignment to facilitate "trace back" and audit by the exporting NPPO. The name and address should be located in the exporting country. The name and address of a local exporter's agent or shipper should be used, where an international company with a foreign address is the exporter.

Declared name and address of consignee: _____
The name and address should be inserted here and should be in sufficient detail to enable the importing NPPO to confirm the identity of the consignee. The importing country may require that the address be a location in the importing country.

Number and description of packages: _____
Sufficient detail should be included in this section to enable the NPPO of the importing country to identify the consignment and its component parts, and verify their size if necessary. Container numbers and/or railcar numbers are a valid addition to the description of the packages and may be included here, if known.

Distinguishing marks: _____
Distinguishing marks may be indicated at this point on the phytosanitary certificate, or else on a stamped and signed attachment to the certificate. Distinguishing marks on bags, cartons or other containers should be included only where they assist in identifying the consignment. Where no entry is made, the term "None" should be entered or the line should be blocked out (to prevent falsification).

Place of origin: _____
This refers to place(s) from which a consignment gains its phytosanitary status, i.e., where it was possibly exposed to possible infestation or contamination by pests. Normally, this will be the place where the commodity was grown. If a commodity is stored or moved, its phytosanitary status may change over a period of time as a result of its new location. In such cases the new location may be considered as the place of origin. In specific circumstances, a commodity may gain its phytosanitary status from more than one place. In these cases where pests from one or more place may be involved, NPPOs should decide which place or places of origin most accurately describe the situation which has given the commodity its phytosanitary status. In such cases, each place should be declared. It is noted that in exceptional cases, such as with mixed seed lots that have more than one country of origin it is necessary to indicate all possible origins.

Countries may require that "pest free area," "pest free place of production," or "pest free production site" be identified in sufficient detail in this section. In any case, at least the country of origin should be indicated.

Declared means of conveyance: _____
Terms such as "sea, air, road, rail, mail, and passenger" should be used. The ship's name and voyage number or the aircraft's flight number should be included if known.

Declared point of entry: _____
This should be the first point of arrival in the country of final destination, or if not known, the country name. The point of entry of the first country of importation should be listed where more than one country is listed in the "TO:" section. The point of entry for the country of final destination should be listed in cases where the consignment only transits through another country. If the country of transit is also listed in the "TO:" section, the points of entry into the transit country as well as the final destination country may be listed (e.g. point A via point B).

Name of produce and quantity declared: _____
The information provided here should be sufficiently descriptive of the commodity (and should include the commodity class, i.e. fruit, plants for planting, etc.) and the quantity expressed as accurately as possible to enable officials in the importing country to adequately verify the contents of the consignment. International codes may be used to facilitate identification (e.g. customs codes) and internationally recognised units and terms should be used where appropriate. Different phytosanitary requirements may apply to different end uses (e.g. consumption as compared to propagation) or states of a product (e.g. fresh compared to dried); the intended end use or state of the product should be specified. Entries should not refer to trade names, size or other commercial terms.

Different phytosanitary requirements may apply to the different end uses (for example, consumption as compared to propagation) or state of a product (e.g., fresh compared to dried); the intended end use or state of the product should be specified. Entries should not refer to trade names, sizes, or other commercial terms.

Botanical name of plants: _____

The information inserted here should identify plants and plant products using accepted scientific names, at least to genus level but preferably to species level.

It may not be feasible to provide a botanical description for certain regulated articles and products of complex composition such as stock feeds.

In these cases, NPPOs should agree bilaterally on a suitable common name descriptor, or the words "Not applicable" or "N/A" may be entered.

Certifying statement

This is to certify that the plants, plant products or other regulated articles described herein have been inspected and/or tested according to appropriate official procedures and are considered to be free from the quarantine pests specified by the importing contracting party and to conform with the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests.

They are deemed to be practically free from other pests. (Optional clause)

In instances where specific import requirements exist and/or quarantine pests are specified, the certificate is used to certify conformity with the regulations or requirements of the importing country.

In instances where import requirements are not specific and/or quarantine pests are not specified, the exporting country can certify for any pests believed by it to be of regulatory concern.

The exporting countries may include the optional clause on their phytosanitary certificates or not.

"… *appropriate official procedures* …" refers to procedures carried out by the NPPO or persons authorized by the NPPO for purposes of phytosanitary certification.

Such procedures should be in conformity with ISPMs where appropriate. Where ISPMs are not relevant or do not exist, the procedures may be specified by the NPPO of the importing country.

"… *considered to be free from quarantine pests* …" refers to freedom from pests in numbers or quantities that can be detected by the application of phytosanitary procedures. It should not be interpreted to mean absolute freedom in all cases but rather that quarantine pests are not believed to be present based on the procedures used for their detection or elimination.

It should be recognized that phytosanitary procedures have inherent uncertainty and variability, and involve some probability that pests will not be detected or eliminated.

This uncertainty and probability should be taken into account in the specification of appropriate procedures.

"… *phytosanitary requirements* …" are officially prescribed conditions to be met in order to prevent the introduction and/or spread of pests. Phytosanitary requirements should be specified in advance by the NPPO of the importing country in legislation, regulations, or elsewhere (e.g., import permits and bilateral agreements and arrangements).

"… *importing contracting party* …" refers to governments that have adhered to the IPPC including Members of the Interim Commission on Phytosanitary Measures until the amendments of 1997 come into force.

Section II. Additional Declaration

Additional declarations should be only those containing information required by the importing country and not otherwise noted on the certificate. Additional declarations should be kept to a minimum and be concise. The text of additional declarations may be specified in, for example, phytosanitary regulations, import permits or bilateral agreements. Treatment(s) should be indicated in Section III.

Section III. Disinfestation and/or Disinfection Treatment

Treatments indicated should only be those, which are acceptable to the importing country and are performed in the exporting country or in transit to meet the phytosanitary requirements of the importing country. These can include devitalization and seed treatments.

Stamp of organization

This is the official seal, stamp or mark identifying the issuing NPPO. It may be printed on the certificate or added by the issuing official upon completion of the form. Care should be taken to ensure that the mark does not obscure essential information.

Name of authorized officer, date and signature

The name of the issuing official is typed or hand-written in legible capital letters (where applicable). The date is also to be typed or hand-written in legible capital letters (where applicable). Only abbreviations may be used to identify months, so that the month, day and year are not confused.

Although portions of the certificate may be completed in advance, the date should correspond to the date of signature. Certificates should not be post- or pre-dated, or issued after dispatch of the consignment unless bilaterally agreed. The NPPO of the exporting country should be able to verify the authenticity of signatures of authorized officers upon request.

Financial liability statement

The inclusion of a financial liability statement in a phytosanitary certificate is optional.

Specific Principles and Guidelines for Preparation and Issue of Phytosanitary Certificates for Re-export

The components of the phytosanitary certificate for re-export are the same as for the phytosanitary certificate except for the section covering certification.

In this section, the NPPO indicates by inserting ticks in the appropriate boxes whether the certificate is accompanied by the original phytosanitary certificate or its certified copy, whether the consignment has been repacked or not, whether the containers are original or new, and whether an additional inspection has been done.
ISPM No. 7 (*Export Certification Systems*) provides guidance on the need for additional inspection.

If the consignment is split up and the resulting consignments are exported separately, then phytosanitary certificates for re-export and certified copies of the original phytosanitary certificate will be required to accompany any such consignments.

Conditions for Issuing a Phytosanitary Certificate for Re-export

When a consignment is imported into a country, then exported to another, the NPPO should issue a phytosanitary certificate for re-export).

The NPPO should only issue a certificate for the export of an imported consignment if the NPPO is confident that the importing country's regulations are met.

Re-export certification may still be done if the consignment has been stored, split up, combined with other consignments or re-packaged, provided that it has not been exposed to infestation or contamination by pests. The original phytosanitary certificate or its certified copy should also accompany the consignment.

Conditions for Issuing a Phytosanitary Certificate for an Imported Consignment

If the consignment has been exposed to infestation or contamination by pests, or has lost its integrity or identity, or has been processed to change its nature, the NPPO should issue a phytosanitary certificate and not the phytosanitary certificate for re-export. The country of origin should still be indicated on the phytosanitary certificate.

The NPPO must be confident that the importing country's regulations are met.

If the consignment has been grown for a specific time (depending on the commodity concerned, but usually one growing season or more) the consignment can be considered to have changed its country of origin.

Transit

If a consignment is not imported, but is in transit through a country without being exposed to infestation or contamination by pests, the NPPO does not need to issue either a phytosanitary certificate or a phytosanitary certificate for re-export.

If, however, the consignment is exposed to infestation or contamination by pests the NPPO should issue a phytosanitary certificate.

If the consignment is split up, combined with other consignments or repackaged, the NPPO should issue a phytosanitary certificate for re-export.

NOTES

SKILL CHECK

1. What is the purpose of phytosanitary certificates?

2. What makes a phytosanitary certificate invalid?

3. When is a certificate fraudulent?

Systems Approach To Fresh Produce Exports

Training Modules

Module 10

Audit

TOPIC: Audit

Session Time

LEARNING OUTCOME

By the end of this session participants will be able to:

- Understand what an Audit is.
- Know what the Key Components of an Audit are.
- Understand how the Audit provides continual improvement.

INTRODUCTION

A quality system is not generally seen in the same light as the financial accounting system. However, because of the inefficient control over businesses operations, a company could be losing money.

Inefficiencies due to duplication of activities, high control and reject rates; malpractice and failure to meet customer specifications may result in the quality costs (the costs of putting things right) being higher than the overall profit margin.

The basis of any Risk Management Programme is to provide assurance that customer's requirements are being met. The basis of the documented procedures is to provide information on how these requirements should be met.

MAO internal quality audit, if effectively undertaken, should uncover such problems. It is vital that only suitably trained and qualified personnel carry out the audit.

The audit is a step-by-step look at the processes to find out if business outputs follow the documented procedures described in the Training Manuals and to see if this is working and suitable to achieve the desired business outcomes (Phytosanitary and Grade requirements).

The process and outcome of audits should be planned, managed and used as improvement opportunities to refine work instructions and process documentation.

The Systems Approach

Design, manufacture and installation processes have become increasingly complex along with more stringent safety and environmental requirements.

Inspection practices that serve only to identify that items or services are acceptable or unacceptable add expense and encourage bad practice. The ideal method is one that would reduce inspection and testing activities. The philosophy is that individuals be responsible for the quality of the work they produce rather than relying on the activities of others. The audit process is a way of measuring effectiveness so that improvements can be made.

This means that rather than putting in an inspection process at the end, (End Point Inspection), a systems approach is developed to ensure that at each critical stage that stage passes – thus reducing the risk and pressures at the final inspection point and increases the confidence that the product will pass.

These activities in themselves, if they are under control, will provide product that is “fit for purpose”.

Once a quality system has been established and implemented the only possible way an organization can verify the effectiveness of the system is to carry out regular audits. It will be necessary to develop a capability to manage the entire process.

This audit function should be independent from and have no direct responsibility for the implementation of the quality system elements.

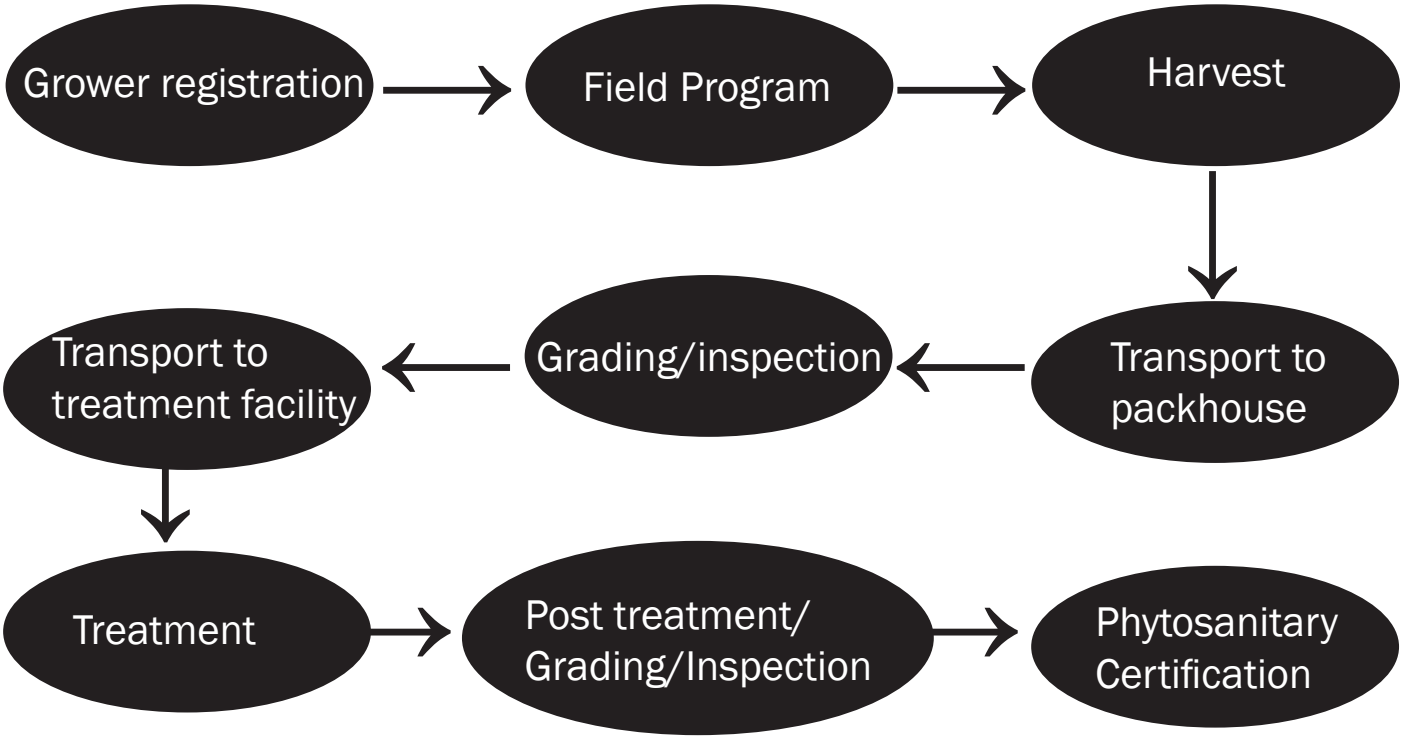
Any such audits should not result in transferring the responsibility for the achievement of quality from operating staff to the auditing function.

The BQA partner (MAF NZ) audits the BQA programme, based around a Quality Management System. With the development of the systems approach based on the training modules there are several levels of monitoring undertaken.

1. MOA staff monitoring compliance at grower/ exporter level
2. MOA Quarantine Staff verifying monitoring of growers and exporters by MOA Extension staff.
3. Internal Audit of System.
4. External Audit of System.

All these forms of monitoring are audits or assessments themselves. Compliance monitoring has been discussed in each of the previous modules. The formal audit process is discussed in this module.

Components of Systems Approach



This module outlines the quality control and management of export commodities through the audit process.

Key Components	Audit Component
Grower Registration	Validation of Information
On Farm Production Monitoring	Verification of Grower Practice Validation of MOA monitoring
Pack house Licensing	Validation of Information Preseason
Pack house Quality Inspection	Verification Grading Standards Verification QC inspection records Verification of training
NPPO Quality Control Inspection	Validation of QC inspection Verification of training Verification of NPPO inspection records
Pack house Audit (NPPO)	Verification of pack house Inspection check
Treatment Verification	Validation of treatment Verification of records
Phytosanitary Certificate Issuance	Verification of records
NPPO Quality System Audit	Internal Audit records

WHAT IS AN AUDIT?

All quality system standards have a requirement for the auditing or the review of the quality system and, in general, such an activity could be defined as:

> *"A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives."*

Immediately after establishing a quality system, an audit should be carried out to confirm that all the relevant procedures and instructions are available at the activity locations and that personnel are aware of their responsibilities within the system. The objectives of such an audit are to confirm the existence and validity of the necessary quality system. Such an audit is known generally as a Systems Audit.

Audits can be classified by who is responsible for carrying out the audit:

First Party - The supplier on itself (MOA Quarantine on MOA Quarantine.)
Second Party - The customer on the suppliers (MOA Extension on Growers)
Third Party – An independent auditor from Customer/Supplier.

Audits are also commonly classified as Internal or External audits.

Internal audits are either the audits on the system (first and second party) which will be a formal process or assessment on suppliers only (second party).

External audits are undertaken by auditors from outside the organisation.

Audit Objectives

An audit is undertaken to indicate whether a system or procedure is working correctly. It highlights non-conformances and should lead to action being taken to correct them and prevent recurrence.

In order for an audit to work effectively, those undertaking the audit must have the organisational freedom to oversee the development, implementation and maintenance of the quality system.

The objectives of the audit are:

- To determine the implementation and effectiveness of the programme.
- To determine conformance or non-conformance of the programme elements against specified contractual requirements.
- To provide a basis for improvement of the programme.
- To meet regulatory requirements.
- To evaluate readiness for third party certification.

The audit process is a key influencing factor on staff attitudes and system improvements if it is conducted in a co-operative way.

Objective Evidence

Objective evidence is evidence that confirms that all activities within each of the functions of a process have been carried out in accordance with established working methods. These methods are identified in documents that are known as procedures.

Procedures will detail:

- The purpose and scope of an activity.
- How, when, where and who will carry out an activity.

In the audit process, the auditor is seeking evidence that procedures and job instructions are being followed. Documentation, interview and observation provide the objective evidence.

DEPTH OF AUDIT

The systems audit is a superficial or shallow audit and can be used very effectively to get the “feel” of a quality system. A system audit confirms that procedures exist and are at the place of use, and that the quality system documentation covers the standard or contract requirement as appropriate. System audits are also often referred to as a “desk-top” audit.

In order to confirm whether or not a procedure or job instruction is actually being implemented and is effective, a compliance audit is carried out. A compliance audit is a thorough audit which means the audit goes into the process, activity, procedure or instruction in detail. Both systems and compliance audits are required to provide a “total audit” of a quality system.

In order to facilitate these audits, it is useful to develop a procedure that describes how staff is expected to behave during an audit by an outside body.

Issues that may be covered would include:

- The requirement to advise relevant employees of the objectives and scope of the audit
- The appointment of suitable members of staff to accompany members of the audit team (generally known as guides)
- The provision of resources for the audit team (office accommodation, telephone, copy facilities and others)
- The requirement to provide access to facilities and objective evidence as requested by the audit team members
- The requirement to cooperate with the audit team members to permit the audit objectives to be achieved
- The necessity to determine and implement corrective action based on the audit results

SCOPE OF AUDIT

The scope of an audit relates to the amount of the quality system that should be audited to establish confidence that all activities are in compliance with requirements. The auditee should be consulted when determining the scope of the audit.

AUDIT SCHEDULING

The need to perform an audit should be determined taking into account the maturity of the system, specified or regulatory requirements and any other pertinent factors.

Significant changes in management, organisation, policies, techniques or technologies could well affect the system and would need to be verified. Changes to the system itself and the results of previous audits are other circumstances which should be considered when deciding audit frequency.

Internally, audits are organised on a regular basis to verify the implementation and effectiveness of one's own system and to review the results of any significant changes as described above.

In both the external and internal situations it is important to establish an audit schedule.

The audit schedule should be established as soon as possible after a quality system is implemented. It is recommended that a system audit should be undertaken within four to six weeks of implementation and then compliance audits scheduled to commence immediately thereafter.

THE AUDITOR

Throughout the audit activity, particularly in the early stages of implementation of any programme, there are bound to be audit findings. Personnel may well have to get used to doing things differently and the new methods may be foreign to them. The auditor should not adopt a belligerent attitude but should guide.

Wherever possible the auditee should be left to determine their own corrective action.

An auditor should be aware of the implications when recommending corrective action and, therefore, should be very sure of their ground.

The auditor must have experience with the activity under audit.

Advice for the auditor

Auditing is a complex relationship between the auditor, the auditee and the situation. The auditor should, therefore, be aware of the way they should react to a given situation and of the image they convey to the auditee.

Knowledge base of the auditor

For an audit to be effective, the auditor must have a good knowledge of the quality system standard being used and the relevant procedures.

Without this knowledge, the auditor may:

- place the incorrect level of importance on an aspect of the standard or procedure.
- ask questions well outside the scope of the audit or responsibilities of the auditee.
- ask questions which would have the auditee doubt the competence of the auditor.

With internal audits of a large organization, it is quite common for the auditor to be viewed as the "technical expert" and not trained in auditing skills. In this case, there is also the danger that the audit will degenerate into a technical discussion rather than a systems or compliance audit.

It is therefore extremely important that the internal auditor should be trained in the audit process.

It is also advisable for the auditor to have some knowledge of current industry practices, contractual requirements and regulatory requirements.

If the auditor is insufficiently trained, they may be easily deceived or side tracked by the auditee.

Should the auditee ask for advice on correcting the non-compliance then give an opinion only and stress that it is only an opinion.

The auditor should :

- learn as much as possible about the auditee
- know the subject material
- maintain control of the audit
- cultivate a proper attitude
- observe good business ethics
- recognize that the position may be considered an imposition
- be seen to be competent
- keep questions short and to the point
- be a good listener.

The primary tools of the auditor are:

- questioning
- listening
- observing (objective evidence).

THE AUDIT PROCESS

Audits require preparation and planning and need to take into account the following:

- The scope and objectives of the audit
- The identification of the auditee's personnel who have significant responsibilities regarding the scope and objectives
- The identification of reference documents such as the applicable quality system standard, quality manual, procedures, job instructions, contract work scope and others
- The identification of the audit team members
- The language of the audit
- The place, date and time the audit is to be conducted
- The identification of the organisational functions or system elements to be audited or assessed
- The anticipated time and duration for each activity
- The development of checklists
- The format and distribution of the audit report.

The total audit process has four distinct phases:

1. Preparation and Planning
2. Performance
3. Reporting
4. Follow-up

PREPARATION AND PLANNING

- Appoint a person or persons to be responsible for the audit.
- Notify the auditee.
- Agree the audit timetable.
- Identify, obtain and review all relevant documents.
- Brief the audit team members.
- Develop the audit checklists.

PERFORMANCE OF THE AUDIT

ENTRY MEETING

The purpose of an entry meeting is to:

- Introduce the auditor
- Confirm briefly the purpose
- Review the timetable and agenda
- Provide a short summary of the methods
- Clarify any ambiguities of the audit process
- Introduce the method by which any non-conformances will be addressed
- Agree a tentative time for the closing meeting
- Arrange for guides to accompany the audit team
- Explain the confidential nature of the audit process
- Arrange to undertake a familiarisation tour of the facility.

REPORTING

It is most important for the auditee to receive prompt feedback on the results of the audit. This should be in the form of a verbal presentation at the exit meeting followed by a documented audit report.

If the auditor pays scant attention to communicating the results of the audit, the auditee will care little about maintaining his/her own system.

The report should contain the evaluation of audit results.

The audit report should include:

- Area audited
- Scope and objectives of the audit
- Details of the audit itinerary/timetable.
- Identification of the audit team members
- Identification of auditee's representatives
- Identification of the audit criteria (reference Risk Management Programme)
- A record of any non-conformances

- The results of the audit
- Audit report distribution list

The body of the report shall have a standardised format of five sections:

a. The entry meeting
b. The audit itself
c. The exit meeting
d. The designated follow up
e. The general observations.

THE EXIT MEETING

The auditee is responsible for initiating the corrective action necessary to correct a deficiency and to correct the cause of the deficiency. The auditor should be responsible only for identifying the deficiency.

Corrective and preventative actions should be completed within a time-scale determined by the auditee but which is acceptable to the auditor. All follow up actions will need to be undertaken to an agreed time-scale.

When responses to follow up action are complete, the audit team will need to verify this by objective measurement. On validation, the corrective action can be signed off.

CLASSIFICATION OF NON-COMPLIANCE

Identified non-compliance shall be defined as either critical, major, or minor depending on how severely they affect the system's ability to continue to provide confidence that the product meets MOA Export Certification requirements.

CRITICAL NON-COMPLIANCE

An incident that results in no confidence/evidence that an operator's system either is in place or being operated. Product cannot be confidently certified without inspection.

Critical non-compliance includes:

- Non accredited staff operating where the results of their activities lead to certification of product.
- Maximum pest limits exceeded during inspection/audit and not actioned.
- Non export product exported or intended to be exported.
- Deliberate provision of incorrect assurances or use of MOA Certificates and/or the provision of additional aeclarations, where they are not applicable.
- Required sample not being taken.
- No Inspection undertaken.
- Failure to follow Accredited procedures.
- Non export product not segregated or separately identified from export product.
- Three or more major non-compliance at any one audit; or any re-occurrence of a major non-compliance detected in the two previous consecutive audits.

Action

Where a critical non-compliance is identified during any audit, the export operation must be suspended.

1. The operator must identify, implement and have verified the agreed corrective action(s).The Operators failure to comply with the agreed corrective action(s) within the three day suspension period will result in no exports.
2. The Auditor has verified an agreed corrective action strategy has been implemented; and another systems audit is successfully been completed.

3. The Operator initiates and completes the full accreditation process again following the inclusion of corrective actions to the appropriate non-complying components of their operator system.

Where a critical non-compliance relating to an accredited staff member and/or operating procedure is identified by the Operator and reported to MOA within 12 hours of detection:

The staff member and/or operating procedure will be subjected to either an immediate additional proficiency assessment or surveillance audit as appropriate to verify agreed corrective actions have been implemented and no further action is required.

MAJOR NON-COMPLIANCE

Incident(s) that result in loosing confidence in the Supplying Operator's System to the extent that ongoing provision of export certification is in doubt. Corrective action needs to be implemented promptly in order to retain confidence that export product meets certification requirements.

Immediate corrective action is required.

Major non-compliance include:

- Significant difference between auditor and auditee defect findings.
- Auditee fails to identify, classify or record defects correctly.
- No inspection facilities and/or equipment.
- Product branding incomplete.
- Amendments to documented procedural details of supplying operator's system not notified to MOA.
- Actions taken following Inspections/audits not recorded.
- Inspector/Auditor not a person named in supplying operator's system.
- Product Specifications (when specified) not available to Inspection/audit staff.
- Corrective action for a minor non-compliance not implemented within the agreed time frame; or
- Three or more minor non-compliance in any one audit.

Action

Where one or two major non-compliance are identified during any audit the audit frequency will be increased until the corrective action is implemented and verified.

A critical non-compliance is to be recorded for every three major non- compliances identified during a single audit.

MINOR NON-COMPLIANCE

Incidents that result in confidence in the product's compliance with export specifications is decreasing, but not immediately placing export certification at risk. Corrective actions are required to comply with the documented system and requirements.

Minor non-compliance include:

- Any amendment to non-procedural details of the documented system not notified to the Director;
- Incomplete inspection/audit records e.g. the following not completed:
    - Recording of sample size;
    - Signing records (where required);
    - Grower identification;
    - Product identification and/or branding not legible; or
    - Incomplete inspection facilities or equipment.

Action

A major Non Compliance is to be recorded for every three minor non-compliances identified during a single audit.

Where any non-compliances not covered by the above examples and definitions are identified, they are to be classified as major non-compliances until clarified by the Director.

OBSERVATIONS

These should include comments on the quality system with a view to improvement.

CORRECTIVE ACTIONS

A corrective action and a time frame for its implementation are to be agreed between the auditor and auditee for each non compliance.

The auditor shall verify that the corrective action has been implemented and is operating effectively within the agreed time frame.

The operator shall record all agreed corrective actions taken to correct identified product and/or system non-compliance.

Corrective actions shall outline:

- What shall be done;
- By whom it shall be done;
- The time frame for implementation of the corrective action; and
- The verification activities to be undertaken to ensure that corrective action has been successfully implemented.

Where the corrective action consists of repacking product, the product must be either re-sampled and re-inspected as repacking occurs, or re-sampled and re-inspected once the repacking is completed. Sampling must be carried out according to the Accredited-sampling plan.

External Audit

Your customer(s) will wish to verify that you have an effective risk based programme operating.

This will provide for them:

- Phytosanitary and/or food safety assurances
- Capability of producing to specification

The auditor will require evidence that your programme is documented and implemented. This means that you need to issue and control all documents, instructions, specifications and standards used in the process of producing a product for export.

The auditor may obtain this evidence by:

- Performing a risk management based audit on your operation
- Contracting a recognised agency to audit on the auditors' behalf

Auditors will place emphasis on your risk management programme documentation in the following areas:

- Process Flow
- Risk Analysis Tables
- The monitoring of CCPs in the process flow, e.g., QC sheets, temperature charts, spray records etc
- Non-conformances,
- Corrective Action documentation
- Verification of Corrective Action Records
- Previous external/internal assessments
- Previous Audit reports

Human Factors in the Audit Process

The purpose of the audit is to determine compliance or otherwise in an objective manner, not to find non-compliance at all costs.

There is a common misconception that an auditor has not performed an adequate job unless they have found a non-compliance. This is certainly not the case. If the auditees system complies, then complete the audit and document the results.

Should non-compliance be observed, then the auditee must be advised, in an objective manner.

A competent auditor has the ability to put the auditee at ease via the opening comments and subsequent questions. The auditor should at all times encourage a spirit of openness and friendliness in order to progress the audit.

The danger is that, unless the auditor has been well trained, opening comments said in jest (as an ice-breaker) may have the opposite results. The auditor should be careful that comments (or comments made to lighten difficult situations) should not be demeaning, slanderous, discriminating or frivolous.

THE DON'T LIST

There are certain things an auditor/assessor should not do:

- don't be late for the meeting; being late puts one on the defensive
- don't be sarcastic
- don't discuss personalities
- don't argue
- don't criticize
- don't be negative
- don't question beyond the level of your knowledge
- don't compare the auditee with others
- don't be secretive
- don't permit disagreement between team members during a meeting
- don't use profane language
- don't get involved in emotive discussions.

The "wish to be friend's" auditor

The auditor who wishes to be friends with everyone sees auditing as a threat to that relationship. As a result, difficult questions are avoided and the auditor becomes easily distracted from the audit.

By addressing non-compliances as system problems not individual problems this can be overcome.

The untrusting auditor

An untrusting attitude will result in suspicion and mistrust between the two parties. An auditor cannot listen effectively to an auditees response if they disbelieve everything the auditee is saying or are looking for a hidden meaning in what is being said.

The tired auditor

Auditing like any other job function becomes tedious with repetition. An auditor that has lost interest and tenacity in the audit process can spread this lethargy easily to others.

Rotating the permanent auditor with other quality tasks or involve the auditor in other quality related projects is recommended.

In the internal situation the auditor has other responsibilities. In this situation the audit may be postponed due to “other commitments”. The message this gives to the auditee is that the audit process is not important.

Attributes and personality of the auditee

As an auditor you will come across a range of attributes and personalities within auditees. Generally, competent auditors can handle auditees. However, auditors should be aware of the fact that there are auditees who may be untrusting, evasive, defensive, distracting or corrupt.

The common types of auditees that auditors need to be wary of are aggressive auditees and disorganized audits.

The aggressive auditee

A number of people have great difficulty in accepting another person asking questions about their particular work activities. The audit, in this instance, is looked upon as a threat to their position and the auditor is viewed as a policeman.

There are four possible resolutions in a situation such as this:

1. Undertake awareness/training session highlighting the objectives and benefits of the quality audit process.

2. Counselling by senior management.

3. Win over the sceptics with suitable charisma and charm and avoid becoming defensive, antagonistic, easily distracted, shy or quiet with the resultant inability to carry out an effective audit.

4. Explain the intent of the document and postpone the audit, advising senior management of the reasons why. (This is effective when there is a lack of understanding of quality system documentation)

There is also the possibility that the auditee is strongly negative to the whole concept of the quality system. This may be as a result of lack of training or understanding in the benefits, approach and objectives.

The disorganized auditee

Sometimes the following situations arise:

- The auditee is not available at the appointed time, either having left their office without leaving a message or having gone to a meeting
- The auditee makes some comment such as “it’s today is it?”
- Constant telephone or employee interruptions making it difficult to control the continuity of the audit.

Unfortunately, it is the people who present such situations who then complain about the audit taking too long. The answer to this is relatively simple – stop the audit and suggest that it be postponed to a more opportune time.

Further action, such as issuing instructions regarding holding or transferring telephone calls, curtailing interruptions, and so on, may also be necessary. Continuing difficulties such as these should be advised to management, through the audit team leader, for action.

SKILL CHECK

1. What is an audit?

2. What are the objectives of the audit?

3. What is the scope of an Audit?

4. What should an Auditor do when auditing?

5. What are the four distinct phases of the total audit process?

6. How are identified non-compliance catergorised?

7. What is the philosophy of the systems approach as it relates to audits?

Systems Approach To Fresh Produce Exports

Training Manual

Appendix

FIJI BREADFRUIT EXPORT PATHWAY *(Artocarpus altilis)*

1. Farm Registration

Grower & Site Registration

- Registration Declaration signed by farmer and exporter
- Farmer & breadfruit sites registered by MOA and given registration number
- A map of the farm is also submitted

2. Field Control Measures

Field Hygiene

- MOA Extension to ensure appropriate Phytosanitary measures are maintained
- Field should be clean at all times (weed free and well maintained)
- Spray with recommended chemicals for respective target pests
- Proper irrigation practice with consistent water supply
- Ripe, over-ripe, fallen, discarded fruits removed and dispose (buriedhurnt) to prevent breeding of fruit flies

Protein bait spraying

- Grower will apply six protein bait spraying prior to first harvest at weekly intervals and during harvesting
- Records to be maintained by grower
- Fiji MOA Extension monitors spraying record and ensure availability of protein baits
- MOA Quarantine audits protein bait records

Harvest

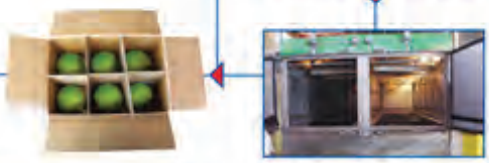
- Breadfruit harvested only from :
  - registered sites
  - fields that received approved field sanitation measures
- Export breadfruit harvested at mature green stage (stage not susceptible to fruit fly attack)
- Only field bins used to collect fruits to reduce fruit damage

3. Exporter / Packhouse

Licensing - Exporter/ packhouse approved and licensed by MOA Quarantine

Packhouse Fiji MOA Inspection

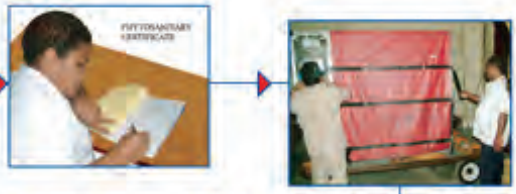
- Daily records of export breadfruit supplied by growers is maintained by packhouse staff
- Grading and inspection done by packhouse staff
- Packhouse staff inspect on grower line basis to detect any quarantine pest and remove fruits with insect damage, ripe, rot/decay and those that do not meet quality specification. These fruits are not acceptable for the export pathway
- Quarantine inspects breadfruit graded by packhouse staff (on a grower line basis)
- Quarantine inspects 450 < 1000 units or 600 for > 1000 units to be covered in 3 hours inspections time
- Quarantine Officer completes and signs the official Transfer Slip for inspected breadfruit to be treated for export
- Only the quantity inspected and recorded on the Transfer Slip is transferred to the Quarantine Treatment Centre along with the grower supply record.
- Exporter ensures that breadfruit is transferred promptly to the Quarantine Treatment Centre in numbered field bins with the completed transfer slip and grower supply detail



4. Quarantine Treatment

High Temperature Forced Air (HTFA)

- Only the quantity of breadfruit indicated on the Official Transfer Slip is accepted by Quarantine at the Quarantine Treatment Centre for HTFA treatment
- Verification done on a grower line basis
- Quarantine Treatment: follow official procedures:(Treatment specification: 47.2 °C for 20 minutes)
- Breadfruit packed, weighed and labeled
- All treated and packed breadfruit stored in the pest proof facility at the Treatment Centre to maintain security of the consignment and prevent against re-contamination



5. Phytosanitary Certificate

- A signed Phytosanitary Certificate (PC) will be issued by Fiji MOA covering each shipment of breadfruit cleared for export to New Zealand if MOA Quarantine is satisfied that all pre-export procedures and pathway requirements have been successfully followed
- Treatment printout and additional declaration should also be attached to the PC

6. On Arrival Inspection and Clearance in New Zealand

- Accompanying documentations checked
- 600 unit sample inspected by NZMAF
- If required, commodity maybe directed to a facility for further treatment
- Biosecurity clearance is given if regulated pests are not detected or are successfully treated following interception/detection.

QUALITY ASSURANCE

Audit of Export Pathway

- *Fiji MOA formally audits the breadfruit export pathway of all breadfruit exporters to ensure compliance*
- *Fiji MOA maintains records of all the audits*

Feed-back on Non Compliance

- *NZMF will inform MOA of interception of regulated pests or non compliance*

Compliance and Monitoring

On Farm Production

- Growers producing breadfruit for export to NZ will comply with all field control and on farm production measures

Export Packhouse

- Packhouses will not accept breadfruit for export to NZ from any grower who is not registered.

- Packhouses not complying with appropriate requirements would be suspended until such time non compliance are rectified.

The Fiji MOA Inspection

- Growers and packhouses will be suspended from exporting breadfruit to NZ if fruit fly (any stage) is found during Fiji MOA inspection until requirements of the procedure are again met.

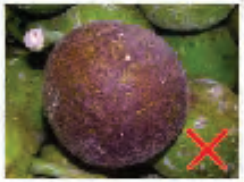
Produced by the SPC Land Resources Division in collaboration with the Fiji Ministry of Agriculture with funding assistance provided by our donor partners

FIJI BREADFRUIT QUALITY GUIDELINES

FOR FRESH EXPORT


ROT


DEEP BRUISE


SUNBURN

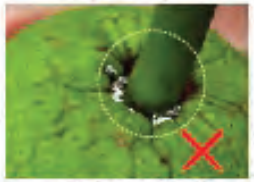

SURFACE BRUISE

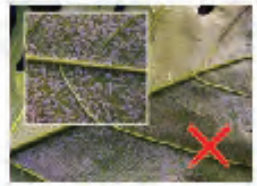
VARIETIES


UTO DINA


BALE KANA


BROWN STEM


MEALY BUG


SCALE


STEM LENGHT


140 mm


130 mm


120 mm


110 mm


100 mm


90 mm


80 mm


SAP STAIN


PACKAGING

MASLR

Produced by Natures Way Cooperative (Fiji) Ltd in collaboration with the Secretariat of the Pacific Community and Fiji Ministry of Agriculture Sugar and Land Resettlement with funding assistance from New Zealand AID

nzaid

FIJI CHILLIE EXPORT PATHWAY *(Capsicum Frutescens)*

1. Farm Registration



Grower & Site Registration

- Registration Declaration signed by farmer and exporter
- Farmer & chillie sites registered by MOA and given registration number
- Red fire, Hot rod, Birds eye variety seeds are only to be sourced from Sigatoka Research Station and field monitored by MOA Extension
- A map of the farm is also submitted

2. Field Control Measures



On-farm Production

- Approved export variety planted in rows and segregated from other varieties to avoid cross-pollination
- Apply recommended good agricultural practices to achieve good quality

Field Hygiene

- MOA Extension to ensure appropriate Phytosanitary measures are maintained
- Field should be clean at all times (weed free and well maintained)
- Spray with recommended chemicals for respective target pests
- Proper irrigation practice with consistent water supply
- Ripe, over-ripe, fallen, discarded fruits removed and dispose (buried/burnt) to prevent breeding of fruit flies

Harvest

- Chillies harvested only from :
  - registered sites
  - fields that received approved field sanitation measures
- Varieties of exported chillies harvested at green stage of maturity in complete separate field bins
- Only field bins used to collect fruits to reduce fruit damage




3. Exporter / Packhouse

Licensing - Exporter/ packhouse approved and licensed by MOA Quarantine

Packhouse Fiji MOA Inspection

- Daily records of export chillies supplied by growers is maintained by packhouse staff
- Grading and inspection done by packhouse staff and inspection record well maintained
- Packhouse staff inspect on grower line basis to detect any quarantine pest and remove fruits with insect damage, ripe, rot /decay or those that do not meet quality specifications.These fruits are not acceptable for the export pathway.
- Quarantine Officer verifies exporters inspection record, purchasing dockets, grower name and number
- Quarantine inspects chillies graded by packhouse staff (on a grower line basis)
- Quarantine inspects 450 < 1000 units or 600 for > 1000 units to be covered in 3 hours inspections time
- Quarantine ensures that correct grower numbers and chillie stamp are marked on the cartons ready for export

4. Phytosanitary Certificate

- A signed Phytosanitary Certificate (PC) will be issued by Fiji MOA covering each shipment of chillies cleared for export to New Zealand if MOA Quarantine is satisfied that all pre-export procedures and pathway requirements have been successfully followed
- Additional declaration should also be attached to the PC
- Grower number must be visible on the chillie cartons

5. On Arrival Inspection and Clearance in New Zealand

- Accompanying documentations checked
- 600 unit sample inspected by NZMAF
- If required, commodity maybe directed to a facility for further treatment
- Biosecurity clearance is given

QUALITY ASSURANCE

Audit of Export Pathway

- *Fiji MOA formally audits the chillies export pathway of all chillie exporters to ensure compliance*
- *Fiji MOA maintains records of all the audits*

Feed-back on Non Compliance

NZMF will inform MOA of interception of regulated pests or non compliance

Compliance and Monitoring

On Farm Production

- Growers producing chillies for export to NZ will comply with all field control and on farm production measures

Export Packhouse

- Packhouses will not accept chillies for export to NZ from any grower who is not registered
- Packhouses not complying with appropriate requirements would be suspended until such time non compliance are rectified

The Fiji MOA Inspection

- Growers and packhouses will be suspended from exporting chillies to NZ if fruit fly (any stage) is found during Fiji MOA inspection until requirements of the procedure are again met.

Produced by the SPC Land Resources Division in collaboration with the Fiji Ministry of Agriculture with funding assistance provided by our donor partners

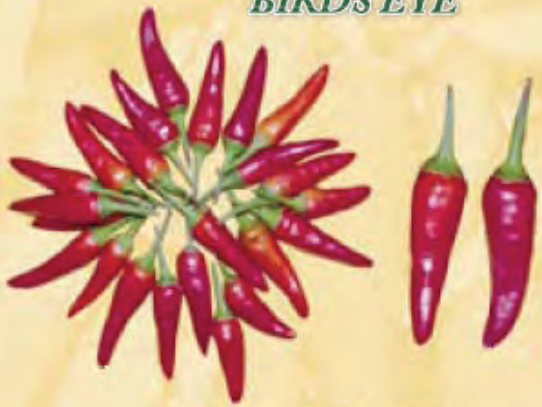
CHILLIES *(Capsicum frutescens)*

Export Commodity Standard (Minimum Guideline)

REDFIRE

Mature Green Stage :
Sound, Clean & Fresh

BIRDS EYE



Mature Red Stage :
Sound, Clean & Fresh

HOT ROD

Whitish Yellow Stage :
Sound, Clean & Fresh

Mature Red Stage

DEFECTS & REJECTS

Immature Green Stage *Black Spot*

Shape, Sizes, Maturity , Poor Quality & Diseased

MASLR

Prepared by the Bilateral Quarantine Agreement taskforce

1. RECOMMENDED VARIETIES

- Red Fire
- Hot Rod
- Long Red Cayenne
- Birds eye

2. YIELDS

- Fresh: 15 – 20 tonnes per hectare.
- Dried: 4 – 6 tonnes per hectare.

3. SOIL REQUIREMENTS

- Prefers well – drained soil with sufficient organic matter.

4. PLANTING TIME

- It is best to plant during hot wet season from September to February.
- Could be grown throughout the year but will need special care

outside the main planting sea son.

- The yields of chillies usually drop during cooler months.

5. PLANT SPACING

- 1m between rows and 30cm within rows.

6. FERTILIZER

- Poultry manure at the rate of 12t/ha. Mix well with soil 2 weeks before planting.
- N.P.K (13:13:21) at the rate of 200 kg/ha – Basal application at planting in black soil and 250kg on red soils.
- Urea at the rate of 100kg/ha. Half (50kg/ha) to be applied at 4 weeks after planting and the other half at 8 weeks.

7. SEED RATE

300 grams per hectare.

8. PLANT PROTECTION

(a) Weed Control

- Hand weed or use hoe.
- Apply Paraquat or Glyphosphate at the rate of 150 to 200ml/15litres of water.

(b) Insect Control

- Cut worm, Aphids, Mites Control by spraying with Malathion, Orthene or Decidex.

c) Disease Control

- Wilt.

Control by planting resistant varieties.

- Downey mildew.

FIJI MANGO EXPORT PATHWAY *(Mangifera indica)*

1. Farm Registration

Grower & Site Registration

- Registration Declaration signed by farmer and exporter
- Farmer & breadfruit sites registered by MOA and given registration number
- A map of the farm is also submitted

2. Field Control Measures

Field Hygiene

- MOA Extension to ensure appropriate Phytosanitary measures are maintained
- Field should be clean at all times (weed free and well maintained)
- Spray with recommended chemicals for respective target pests
- Proper irrigation practice with consistent water supply
- Ripe, over-ripe, fallen, discarded fruits removed and dispose (buriedhurnt) to prevent breeding of fruit flies

Protein bait spraying

- Grower will apply three protein bait spraying for pickling stage and six spraying for mature stage at weekly intervals depending on production
- Records to be maintained by grower
- Fiji MOA Extension monitors spraying record and ensure availability of protein baits
- MOA Quarantine audits protein bait records

Harvest

- Mango harvested only from :
  - registered sites
  - fields that received approved field sanitation measures
- Export mangoes harvested at mature green stage (stage not susceptible to fruit fly attack)
- Only field bins used to collect fruits to reduce fruit damage

3. Exporter / Packhouse

Licensing - Exporter/ packhouse approved and licensed by MOA Quarantine

Packhouse Fiji MOA Inspection

- Daily records of export mango supplied by growers is maintained by packhouse staff
- Grading and inspection done by packhouse staff
- Packhouse staff inspect on grower line basis to detect any quarantine pest and remove insect damage, ripe, rot/decay and those that do not meet quality specification. These fruits are not acceptable for the export pathway
- Quarantine inspects mango graded by packhouse staff (on a grower line basis)
- Quarantine inspects 450 < 1000 units or 600 for > 1000 units to be covered in 3 hours inspections time
- Quarantine Officer completes and signs the official Transfer Slip for inspected mango to be treated for export
- Only the quantity inspected and recorded on the Transfer Slip is transferred to the Quarantine Treatment Centre along with grower supply record
- Exporter ensures that mango is transferred promptly to the Quarantine Treatment Centre in field bins with the completed transfer slip

4. Quarantine Treatment

High Temperature Forced Air (HTFA)

- Only the quantity ofmango indicated on the Official Transfer Slip is accepted by Quarantine at the Quarantine Treatment Centre for HTFA treatment
- Verification done on a grower line basis
- Quarantine Treatment: follow official procedures;(Treatment specification: 47.2 °C for 20 minutes)
- Mangoes packed, weighed and labeled
- All treated and packed mango stored in the pest proof facility at the Treatment Centre to maintain security of the consignment and prevent against re-contamination

5. Phytosaniltary Certificate

- A Phytosaniltary Certificate (PC) will be issued by Fiji MOA covering each shipment of mango cleared for export to New Zealand if MOA Quarantine is satisfied that all pre-export procedures and pathway requirements have been successfully followed
- Treatment printout and additional declaration should also be attached to the PC

6. On Arrival Inspection and Clearance in New Zealand

- Accompanying documentations checked
- 600 unit sample inspected by NZMAF
- If required, commodity maybe directed to a facility for further treatment
- Biosecurity clearance is given

QUALITY ASSURANCE

Audit of Export Pathway

- *Fiji MOA formally audits the mango export pathway of all mango exporters to ensure compliance*
- *Fiji MOA maintains records of all the audits*

Feed-back on Non Compliance

NZMF will inform MOA of interception of regulated pests or non compliance

Compliance and Monitoring

On Farm Production

- Growers producing mangoes for export to NZ will comply with all field control and on farm production measures

Export Packhouse

- Packhouses will not accept mangoes for export to NZ from any grower who is not registered.

- Packhouses not complying with appropriate requirements would be suspended until such time non compliance are rectified.

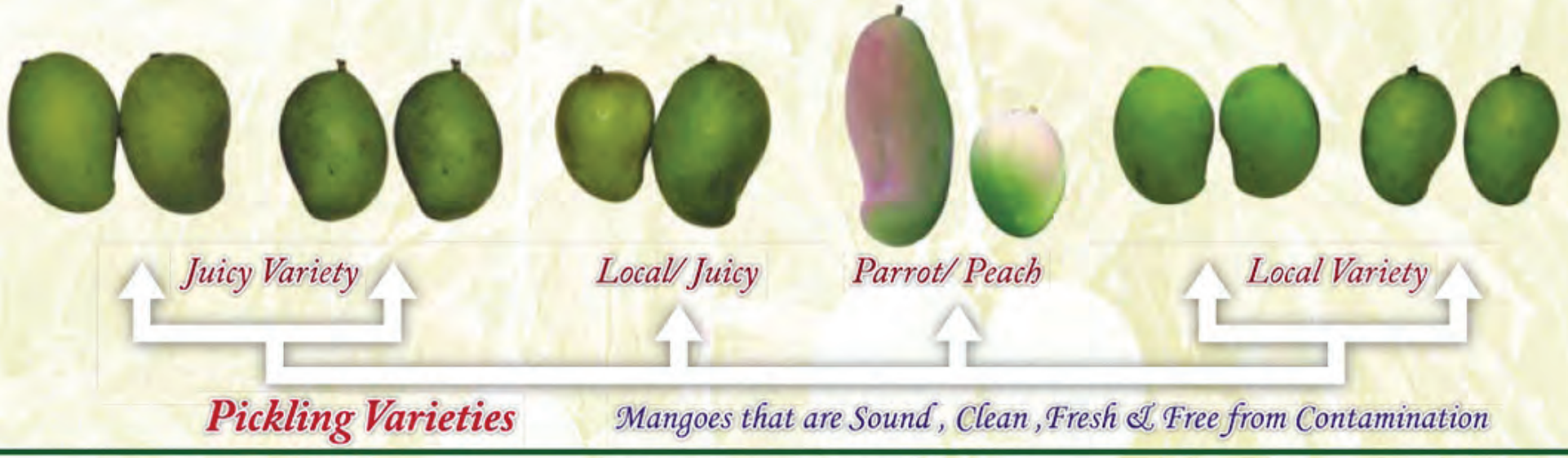
The Fiji MOA Inspection

- Growers andp ackhouses will be suspended from exporting mangoes to NZ if fruit fly (any stage) is found during Fiji MOA inspection until requirements of the procedure are again met.

Produced by the SPC Land Resources Division in collaboration with the Fiji Ministry of Agriculture with funding assistance provided by our donor partners

PICKLING MANGOES *(Mangifera indica)*

Export Commodity Standard (Minimum Guideline)



Pickling Varieties — *Mangoes that are Sound , Clean , Fresh & Free from Contamination*

DEFECTS / REJECTS

MASLR

Prepared by the Bilateral Quarantine Agreement taskforce

FIJI PAPAYA EXPORT PATHWAY *(Carica papaya)*

1. Farm Registration

Grower & Site Registration

- Registration Declaration signed by farmer
- Farmer & papaya sites registered by MASLR and given registration number
- A map of the farm is also submitted

2. Field Control Measures

Field Hygiene

- Field should be clean at all times (weed free and well maintained)
- Spray with Benlate & Mancozeb to control anthracnose
- Dried leaves should be removed and burned
- Papaya shoots emerging along trunk should be removed
- Proper irrigation practice with consistent water supply to control lumpiness in fruit
- Ripe, over-ripe, fallen, discarded fruits removed and dispose (buried/burnt) to prevent breeding of fruit flies

Harvest

- Papaya harvested only from :
  - *registered sites
  - *fields that received approved field sanitation measures
- Export papaya harvested at colour break (stage not susceptible to fruit fly attack)
- Field bins used to collect fruits to reduce fruit damage

3. Exporter / Packhouse

Licensing - Exporter/ packhouse approved and licensed by MASLR Quarantine

Packhouse Fiji MASLR Inspection

- Daily records of export papaya supplied by growers is maintained by packhouse staff
- Grading and inspection done by packhouse staff
- Packhouse staff inspect on grower line basis to detect any quarantine pest and remove fruits with insect damage, rot or decay. These fruits are not acceptable for the export pathway
- Quarantine inspects papaya graded by packhouse staff (on a grower line basis)
- Quarantine Officer completes and signs the official Transfer Slip for inspected papaya to be treated for export
- Only the quantity inspected and recorded on the Transfer Slip is transferred to the Quarantine Treatment Centre
- Exporter ensures that papaya is transferred promptly to the Quarantine Treatment Centre in field bins with the completed transfer slip

4. Quarantine Treatment

High Temperature Forced Air (HTFA)

- Only the quantity of papaya indicated on the Official Transfer Slip is accepted at the Quarantine Treatment Centre for HTFA treatment
- Quarantine Treatment: follow official procedures; (Treatment specification: 47.2˚C for 20minutes)
- Papaya packed and labeled
- All treated and packed papaya stored in the pest proof facility at the Treatment Centre to maintain security of the consignment to prevent against re-contamination

5. Phytosanitary Certificate

- A Phytosanitary Certificate (PC) will be issued by Fiji MASLR covering each shipment of papaya cleared for export to New Zealand if MASLR Quarantine is satisfied that all pre-export procedures and pathway requirements have been successfully followed
- Treatment printout should also be attached to the PC

6.On Arrival Inspection and Clearance in New Zealand

- Accompanying documentations checked
- 600 unit sample inspected by NZMAF
- If required, commodity maybe directed to a facility for further treatment
- Biosecurity clearance is given if regulated pests are not detected or are successfully treated following interception / detection.

QUALITY ASSURANCE

Audit of Export Pathway

Fiji MASLR formally audits the papaya export pathway of all papaya exporters to ensure compliance

Fiji MASLR maintains records of all the audits

Compliance and Monitoring

On Farm Production

- Growers Producing papaya for export to NZ will comply with all field control and on farm production measures

Export Packhouse

- Packhouses will not accept papaya for export to NZ from any grower who is not registered.

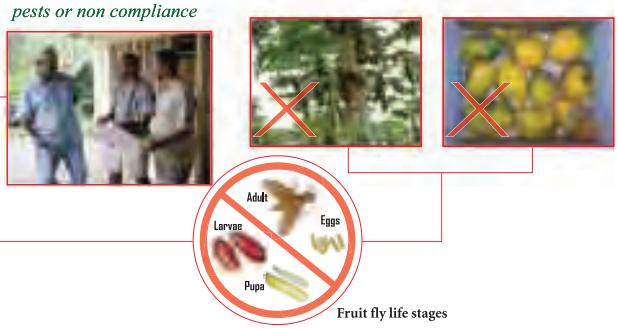
- Packhouses not complying with appropriate requirements would be suspended until such time non compliance are rectified.

The Fiji MASLR Inspection

- Growers and packhouses will be suspended from exporting papaya to NZ if fruit fly (any stage) is found during Fiji MASLR inspection until requirements of the procedure are again met.

Feed-back on Non Compliance

NZMAF will inform MASLR of interception of regulated pests or non compliance



Fruit fly life stages

Australian Government AusAID nzaid MASLR

1. Varieties

- Hawaiian Solo selections, namely Sunrise and Waimanalo
- Export Variety is Sunrise

2. Climate & Soil Requirements

- Can be planted throughout the year soils should be well drained and aerated.
- Fertile solid with a pH of 6 -7 is preferable.

3. Land Preparation

- Cultivate soil properly to allow easy penetration of roots.
- In heavy soils deep ploughing is needed for aeration and proper soil drainage.
- On flats, make raised beds (ridges) at least 45cm high and 3m apart.

4. Planting time

- Plant during wet, hot months (October to March) for good establishment.

- However if irrigation is avail able, pawpaw can be planted at anytime of the year.

5. Spacing

- For Solo varieties, recom mended spacing is 3m x 2m i.e. 3m between rows and 2m between plants. (1667 plants per hectare)

6. Planting

- Propagation of pawpaw is by seed. Seedlings are raised in nursery for transplanting or seeds can be directly planted in fields.
- Seedlings for transplanting are ready in 6 – 8weeks after sowing and 3 plants per site is recommended till flowering which is then thinned to 1 hermaphrodite plant/site. The sex of the plant can only be determined at flowering stage.

7. Fertilizer

- Pawpaw has high nitrogen requirements. Lack of nitrogen will be shown by slow growth, pale green leaves and reduction in number and size pf leaves. Potassium is needed for tree vigour and high productivity.
- NPK 13:13:21 application rates is as follow:

a) Basal – 90g/plant (half mixed at the bottom of the hole and the reminder spread around the plant after it has been carefully removed from the polythene bag.

b) 2nd quarter – 140g/plant

c) 3rd & 4th quarter – 230g/plant and thereafter the same amount every 3 months for the economic life of the crop (i.e. 3 years)

- Application of Boron (Borax Pentahydrate) at 10g/plant at planting and 10g before flowering at 3 months after every 6 months.

8. Irrigation Requirements

- Can use low-level sprinklers, drip irrigation or flood irrigation. Irrigate young seedlings daily, young plants weekly and matured plants (4 – 5months after planting) should be irrigated upon determining the soil moisture at 5 – 10cm depth by feeling the soil with hand (sticky soil is wet – no irrigation), (friable & firm soil is moist – little irrigation), and loose and soft/hard is dry soil – regular irrigation needed.

9. Flowering & Fruiting

- Flowering and fruit development occurs 4 – 6 months after trans planting.
- Fruits mature in 60 – 70 days from fruit set.

10. Thinning the Crop

- Hermaphrodite fruits are in demand, therefore flowers should be carefully inspected during thinning of plants to remove male and female plants. However female plants can be kept if no hermaphrodite plant found on the site.
- Thin out unproductive wood to increase flowering and fruiting and removal of young fruits for allowing development of quality fruits (2 fruits/node).
- Thinning of fruits to be done during fruit set at short intervals as more

When to Plant

French beans can be grown all year round. However, best results are obtained during cooler months. For year round supply, plant a small patch every 3 to 4 weeks.

Varieties

- Contender
- Top Crop
- Golden Wax
- Labrador

Spacing

- French bean is planted 50 to 75cm between rows and 15 to 20cm within rows. This will give a total of 100,000 plants per hectare.

How to Plant

- French beans are directly sown into the well prepared plots.

Seed Rate

- 45 to 50kg of seed will be required to plant one hectare of French bean.

- Seeds are available from commercial seed suppliers

Fertilizer

- 5 tonnes per hectare of Poultry Manure should be incoporated in the soil 2 weeks before planting.

- 200 kg/ha of NPK (13:13:21) should be applied before planting as basal application

- 100 kg/ha of urea should be applied in two split applications of 50kg/ha each at 2 weeks and 4 weeks after planting.

Cultivation

- Weeding and hilling are essential to get the best results. In dry weather, irrigation should be used.

- To get quality produce the crop should be weed free at all times.

Harvesting

- French beans are ready for harvest at 8 to 10 weeks after planting and should continue for a month. Harvest frequently while the pods are tender. Store the harvested produce in shade to maintain the quality.

Returns

A good crop of French bean will normally yield about 10 to 15tonnes per hectare and are normally sold at of $1.00 to $2.00 per kg in the local markets.

Therefore, one hectare of French bean will fetch a price of $10,000.00 to $30,000.00. The cost to produce one kg of French bean is about $0.16 to $0.22.

BEANS

Export Commodity Standard (Minimum Guideline)

Long Bean (Vigna sesquipedalis)

French Bean (Phaseolus vulgaris)

Red Cow Pea / Green Cow Pea (Vigna Sinesis)

Sound, Clean , Free from any form of contamination & disease - fresh

DEFECTS / REJECTS

Long Bean (Vigna sesquipedalis)

French Bean (Phaseolus vulgaris)

Red Cow Pea / Green Cow Pea (Vigna Sinesis)

Poor Quality, Shape , Sizes, Contaminated , Pest & Diseased Infested

MASLR

Prepared by the Bilateral Quarantine Agreement taskforce

Fresh Leafy Vegetables

Export Commodity Standard
(Minimum Guideline)

Rourou (Colocasia esculenta)

Rosella Leaves (Hibiscus sabdarifa)

Amaranthus (Amaranthus spp)

Clean , Free from any form of contamination & disease - fresh

DEFECTS / REJECTS

Pest Infected

Contamination

Diseased leaves

Poor Quality

Roots

MASLR

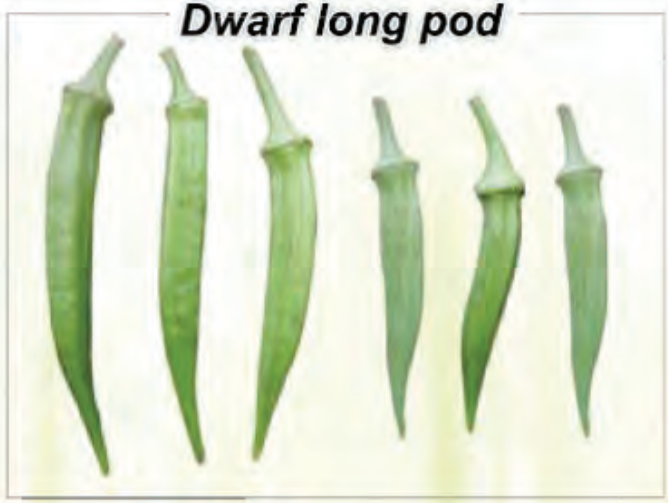
Prepared by the Bilateral Quarantine Agreement taskforce

OKRA *(Abelmoschus esculentus)*

Export Commodity Standard (Minimum Guideline)

Clemeson spineless

Dwarf long pod



Sound , Clean, Fresh & Free from any form of Pest & Disease Contamination

DEFECTS & REJECTS

Deform

Gall

Shape, Size, Maturity & Poor Quality

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