



MPI Technical Standard: Phytosanitary Inspection

31 March 2015

TITLE

Plant Export Requirement: MPI Technical Standard: Phytosanitary Inspection

COMMENCEMENT

This Plant Export Requirement comes into force on the 1st June 2015.

ISSUING AUTHORITY

This Plant Export Requirement is issued

Dated at Wellington this 31st day of March 2015



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(acting under delegated authority of the Director General)

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Introduction

This introduction is not part of the Plant Export Requirement, but is intended to indicate its general effect.

Purpose

To specify the minimum technical requirements for the completion of phytosanitary inspections on behalf of MPI.

Background

The Ministry for Primary Industries (MPI) has developed a series of operating standards to manage the export certification of plants and plant products. The series of plant export certification standards can be found on the MPI website.

The MPI regulatory model for plant exports operates through authorised Independent Verification Agencies (IVAs) and MPI approved organisations (MAOs) undertaking services on MPI's behalf.

This standard specifies the minimum requirements for IVAs and MAOs to meet when undertaking phytosanitary inspections.

Who should read this Plant Export Requirement?

This standard applies to organisations seeking MPI approval to undertake phytosanitary inspection activities of plant and plant products.

Why is this important?

Operating other than in accordance with this standard may result in MPI withdrawing their authorisation of an IVA or approval of a MAO for undertaking phytosanitary inspection services on behalf of MPI.

Document history

Previous Version Date	Current Version Date	Section Changed	Change(s) Description
1 June 2006	25 March 2015	Whole document	Full review and reissue of this standard.

Other information

MPI Certification Standard: Assurance System Framework: including;

- Appendix 1: References
- Appendix 2: Definitions

MPI Plant Export Certification Standard: IVA Requirements

MPI Plant Export: Organisation Requirements

The International Standards for Phytosanitary Measures:

- Guidelines for Inspection (ISPM 23);
- Phytosanitary Certification System (ISPM 7);
- Methodologies for sampling of consignments (ISPM 31);
- Categorisation of commodities according to their Pest Risk (ISPM 32).

Import Health Standard for processed products for sampling of inert materials.

Part 1: MPI Principles for Phytosanitary Inspection

- (1) To gain MPI phytosanitary certification each consignment must be inspected by an authorised Independent Verification Agency (IVA) or an MPI approved organisation (MAO) for compliance to the importing country's phytosanitary requirements (ICPRs).
- (2) An MPI approved sampling plan consistent with ISPM 23 must be defined prior to sampling and inspection being undertaken. The plan must be based on either:
 - a) 100% inspection of the plant material in the consignment; or
 - b) an MPI approved statistical sampling method; or
 - c) an importing country's sampling plan as specified (or referenced) in the ICPR.
- (3) Phytosanitary inspection must be based on:
 - a) examination of documents associated with the consignment or lot to confirm product identity and traceability;
 - b) reconciliation of the lot against the product identification and traceability documents;
 - c) visual examination (unless the importing country requires further testing) of a sample of plant products and associated packaging from the lot for the presence/absence of specified quarantine pests and other phytosanitary requirements (such as freedom from soil);
 - i) the visual examination must be undertaken as soon as practical after the sample has been drawn.
- (4) The results of the inspection, decisions made and actions taken must be documented.
- (5) Phytosanitary security (i.e. protection from any alteration of the plant product's phytosanitary status) following inspection through to the point of export must be maintained.

Part 2: General Requirements

- (1) To undertake phytosanitary inspections of plant material on behalf of MPI, IVAs must be authorised and organisations must be approved by MPI.

Guidance

- The process for MPI authorisation of IVAs and the requirement for documented procedures are described in MPI Plant Export Certification Standard: IVA Requirements.
- The process to become an MAO and the requirement for documented procedures are described in MPI Plant Export Certification Standard: Organisation Requirements.

2.1 Phytosanitary inspection and phytosanitary security procedures

- (1) Organisations undertaking phytosanitary inspection of plant material must document procedures which clearly describe how the organisation meets the requirements in Part 3 of this standard.
- (2) Organisations undertaking post inspection phytosanitary security activities must document procedures which describe how the organisation maintains the eligibility of plant material for certification refer to MPI Certification Standard: Organisation Requirements (Part 2.4) and IVA Requirements (Part 2.6).

Guidance

- An organisation may choose to only provide a service to maintain phytosanitary security.
- Organisations undertaking phytosanitary security actions will need to decide if they intend to also provide phytosanitary inspection of plant material as part of their role.

2.2 Staff competency for phytosanitary inspection and phytosanitary security

- (1) In addition to the general staff competency requirements specified in the MPI Plant Export Certification Standard: IVA Requirements or Organisation Requirements, phytosanitary inspection and post inspection personnel must also demonstrate the following specific competencies.
 - a) Staff carrying out sampling must be competent in:
 - i) understanding and following written procedures;
 - ii) determine the minimum sample size and how this relates to sub sampling at intervals that are representative of the lot;
 - iii) draw/collect samples randomly from throughout the lot.
 - b) Inspection staff must be competent in:
 - i) understanding and following written procedures;
 - ii) detecting pests (or symptoms of pests) of concern to the importing country on the product and the associated packaging;
 - iii) accurately identifying pests to their level of assessed ability;
 - iv) analysing and deciding on the significance of their pest findings;
 - v) applying importing country requirements (ICPRs), import permits and associated additional declarations (ADs) by taking appropriate accept/reject actions;
 - vi) accurately recording all their findings, decisions made and actions taken.

- c) Phytosanitary security staff must be competent in:
 - i) understanding and following written procedures;
 - ii) confirming the post inspection phytosanitary integrity of the export consignment has been maintained (i.e. product substitution and contamination e.g. pests, seeds, feathers, soil and organic matter post inspection has not occurred);
 - iii) accurately recording all their findings, decisions made and actions taken.

Part 3: Phytosanitary Inspection and Phytosanitary Security Requirements

3.1 Identification of lots for inspection

- (1) Organisations documented procedures must describe how:
 - a) the entire consignment or each homogenous lot is identified and tracked through to point of export;
 - b) production site clearances for pest specific ADs (where applicable) are identified and traceable back to each production site.

Guidance

- It is not necessary to demonstrate homogeneity in cases where 100% of the plant material in the lot is inspected.
- Where the pest risk isn't altered significantly during post-harvest, homogeneity should be determined prior to harvest so that the harvested lots can be identified (e.g. bin cards, stamps, marks) and tracked from the point of harvest to packed product for pre- export inspection;
 - A lot can be related to a production period as long as the lot being packed is homogeneous.
- Where the pest risk is significantly altered during the post-harvest process (i.e. fully processed products) homogeneity can be related back to the processing step;
 - In this instance a lot may be defined as a production period.
- Physical segregation of the harvested lots along with an identification system can be used during the consolidation, processing/packing stages to assembly of the final consignment to confirm eligibility for export phytosanitary certificate.
- Where plant products are packed into individual packages and part packs remain at the end of a packing run (lot), the MAO may top up packs with compliant product as long as there was not a requirement for the product to have been treated in a special way (e.g. per an official assurance programme (OAP)).
- Refer to MPI Plant Export Certification Standard: Seed Certification for identification of arable seed lines seeking both phytosanitary and varietal certification.

3.2 Sampling plans

3.2.1 Organisations that undertake 100% Inspection

- (1) Organisations must document their procedures that describe this method of operating.

3.2.2 Organisations that draw samples from homogeneous lots

- (1) The organisation must document and operate an MPI approved sampling plan.
- (2) Each sampling plan must be based on one of the following:
 - a) at least 95% confidence that the level of quarantine pests (as specified by the importing country) within the lot does not exceed a MPL of 0.5%;
 - b) where the importing country phytosanitary requirements are not known or the quarantine pests of the importing country are not known, a minimum 95% confidence level that the presence of pests within the lot does not exceed a MPL of 5.0%;
 - c) the importing country's sampling plan as specified (or referenced) in the ICPR.

- (3) All sampling plans must:
- a) describe how the sampler confirms the sample is being drawn from a homogeneous lot;
 - b) define the inspection unit;
 - c) describe how the sample is randomly selected from throughout the lot:
 - i) samples can be clustered within a package but each package must be selected from throughout the lot;
 - ii) where the lot is made up of bulk packs, the bulk pack must not be sub sampled;
 - iii) hand selection of units to make up a sample is not permitted.
 - d) ensure the sample size is at least the minimum number of inspection units from which a phytosanitary decision can be made;
 - e) demonstrate that once the sample (or sub sample) has been selected and inspection commenced, sampling is not extended to enable the lot to pass;
 - f) describe that once selected, the identity, traceability and security of samples is maintained through to inspection.

Guidance

- Where MPI does not hold importing country phytosanitary requirements, exporters should ascertain the official requirements and provide official communications from the importing country (e.g. import permit) to the IVA before undertaking a phytosanitary inspection.
- ADs (including treatments) must not be included in phytosanitary certificate requests when the importing countries phytosanitary requirements are not known.
- Sampling plans may make reference to the MPI maximum pest limit (MPL) tables.
- Fresh produce/Cut flowers and foliage:
 - A common sampling plan involves the random selection of sub samples (e.g tray of kiwifruit /pack of fruit) from throughout the lot with a minimum sample size of 600 units (for an MPL of 0.5%) from each homogeneous lot;
 - Where a 5% MPL applies a common minimum sample size is 60 units.
- Growing medium (e.g. sphagnum moss, bark chip, vermiculite, scoria):
 - A standard sampling plan is based on volume; 6 litre (6x100cm³) sample is equivalent to a 600 unit sample;
 - Collect either 24 x 0.25 litre sub samples randomly throughout the lot to achieve the 6 litres minimum sample with a sampling device (e.g. scoop, auger) or select sufficient packages to achieve the minimum sample size.
- Seed and Grain:
 - The ISTA sampling methods and sample sizes are accepted by MPI for use in seed phytosanitary certification. Reference: International Rules for Seed Testing 2014, chapter 2 sampling.
- Wood products:
 - Organisations undertaking 100% inspection should describe the operational features of the work and inspection environment including how the consignment or lots are established and identified for acceptance/rejection purposes;
 - A standard sampling plan for poles/sawn timber involves randomly selecting bundles/packages to provide the sample for inspection (i.e. the entire contents of these selected bundles/packages needs to be inspected);
 - A standard sampling plan for wood chip, bark, sawdust, wood shavings etc, refer to guidance for growing medium above.
- For fully processed products – refer to Part 3.2.3 or for inert materials refer to Part 3.2.4.

3.2.3 Fully processed plant products

- (1) This section relates to commodities that have been processed to the point where they do not remain capable of being infested with pests.
- (2) In instances where an importing country requests a phytosanitary certificate for fully processed plant products without stating a sampling plan or inspection process, the inspector must verify that the documentation describing the processing method accurately describes the physical consignment.

Guidance

- Examples of fully processed products include, multi-method processing (e.g. plywood, particle board), preservation in liquid, pureed items, roasting, sterilisation. For a full list refer to ISPM 32 Annex 1.
- ADs for frozen plant products for consumption are normally associated with confirmation of the storage conditions (e.g. temperatures and duration) rather than inspection of the frozen plant material.
- To gain certification ADs for frozen plant product the organisation's scope of approval will need to include option 2 (refer to MPI Certification Standard: Organisation Requirements, Part 2.2, Table 1).

3.2.4 Inert materials

- (1) In instances where an importing country requests a phytosanitary certificate without stating a sampling plan or where the importing country requirements are not known for inert materials, the following sampling plan can be used.

Lot size (units)	Sample size (units)
1 - 50	2
51 – 100	3
101 – 200	4
201 – 350	6
351 – 500	8
501 – 750	10
751 – 1200	12
1201 – 2000	15
2001 – 3500	20
3501 – 5000	25
over 5000	40

Guidance

- Examples of inert material include rock, pavers, concrete, scrap metal.

3.3 Inspection

- (1) All inspection procedures must describe how:
- a) each lot presented for inspection is checked to confirm it is accurately identified and traceable to the place of production;
 - b) visual inspection for pests and other phytosanitary requirements (e.g. soil) are undertaken as soon as possible after the sample has been drawn;
 - c) visual inspection includes both the product and the packaging used. This must include confirming ISPM 15 certification mark is on the wood packaging (where required);
 - d) the inspection technique as applied by the Importing country (if known) is undertaken;
 - i) where an importing country inspection technique is not known the inspection technique must be capable of detecting pests of phytosanitary concern to the specific commodity.
- (2) Where the sample consists of bulk packs (e.g. a one tonne bag of onions, a packet of timber) the entire contents must be inspected.

Guidance

- Inspection techniques should be reviewed regularly to account for experience gained and any new technical developments.
- A lot may be failed if the MPL acceptance number has been exceeded before the full sample has been inspected.

- (3) Phytosanitary inspections must be undertaken utilising facilities and equipment that enable the detection of pests of phytosanitary concern. Facilities and equipment must:
- a) meet the requirements specified by the importing country (where known);
 - b) provide a minimum light level of 1000 lux at the point at which product is examined;
 - c) be accurately calibrated (where necessary) and any correction factors identified;
 - d) include technical aids and reference material that are available to inspection personnel to facilitate the inspection process and identification of pests and their symptoms.

Guidance

- Fresh fruit and vegetables:
 - Inspection normally involves 100% examination of all the surface area with more intensive examination undertaken where pest symptoms are detected by cutting or removing parts of the individual plant material (e.g. calyx, stems) to confirm the absence or presence of pests;
 - The intensity of inspection and examination technique should consider the pests of phytosanitary concern and where this is not achievable with naked eye inspection, additional equipment (e.g. magi lamp, 10x lens) should be considered to enhance the examination.
- Bunched products (e.g. bunches of grapes, truss of tomatoes):
 - Inspection normally involves an examination of the internal 'hard to get at' areas of bunches and the connecting stems;
 - Refer to guidance for fresh fruit and vegetables, cut flowers and foliage.
- Asparagus:
 - Inspection normally involves an taking a bundle not exceeding six stems/spears and examine for pests;
 - Hold over a surface (that contrasts with the pests) tapping the bundle against the other hand;
 - Examine the surface and bunches for any pests
- Cut flowers and foliage:
 - Inspection normally involves 100% examination of all the surface area (e.g. this includes the underside of flowers and foliage and amongst stamens and petals of flowers) with more intensive

<p>examination undertaken where pest symptoms are detected to confirm the absence or presence of pests.</p> <ul style="list-style-type: none"> • Bulk Seed and Grain: <ul style="list-style-type: none"> – Phytosanitary inspection of each seed line may be undertaken by competent phytosanitary inspection staff utilising the same method as used for the sample drawn for seed varietal certification purposes; – Alternatively, the sample submitted for seed testing can be inspected for phytosanitary purposes at an approved seed testing station. Where this option is exercised the seed sampling officer would still need to verify the general storage conditions for each consignment is free from storage pests; – The examination technique for seed and grain may include sieving out the seed from the contaminants in the sample and inspecting the remnants on a split white/black surface. • Wood products: <ul style="list-style-type: none"> – When inspecting following or prior to an MPI approved treatment, the emphasis of the inspection will be on phytosanitary requirements not addressed by the treatment (e.g. soil, fungi, bark); – Where it is operationally impractical to examine all surfaces of each unit, allowance has been made to examine: <ul style="list-style-type: none"> – Two surfaces of sawn timber (not the sawn ends); and – All visible surfaces of stacked logs. • Inert materials: <ul style="list-style-type: none"> – Phytosanitary inspection of each homogeneous lot may be undertaken by competent phytosanitary inspection staff utilising the sample drawn or forward the sample to a MPI approved pest identification laboratory.
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3.4 Decision making

- (1) The organisation's documented procedures must describe how a decision will be made on each lot's compliance to an importing country's phytosanitary requirements.
- (2) All decision making procedures must include or make reference to the applicable phytosanitary acceptance criteria for each commodity/country combination (refer to Table 1).

Table 1: Phytosanitary decision criteria by commodity

Product type	Quarantine pests are specified by an importing country	No ICPR (or import permit) or no quarantine pests listed	Soil tolerance where importing country specifies zero
All plant products (excluding wood products & seed for sowing)	Use 0.5% MPL (refer to Table 1a or 1b).	Use 5% MPL (refer to Table 2a or 2b).	≤ 25g soil per inspection sample.
Wood products (e.g. logs & timber)	Reject individual inspection units or lots (where appropriate) when quarantine pests or phytosanitary issues (e.g. bark) are detected.		Soil clumps ≤5mm thickness and ≤25mm in diameter.
Seed for sowing	NIL*	NIL*	0.1% by weight per inspection sample*.
Inert materials	NIL	NIL	≤ 25g soil per inspection sample.

* As agreed with SQMA, refer to guidance note in Part 3.5.

- (3) Inspectors must gain positive identification by an approved supplier of plant pest identification services in cases where inspectors detect a pest they are not competent to identify.

Guidance

- If the decision is to treat the pest as actionable the formal identification of the pest is not required.
- A list of approved suppliers of pest identification services is on the MPI website.

3.5 Management of non-conforming product

- (1) The organisation's documented procedures must describe how non-conforming plant products are managed by either:
- a) removal or treatment of pests of concern; or
 - b) sending the non-conforming lot to an alternative market (domestic or export) where the identified pests are not a phytosanitary concern; or
 - c) rejection and disposal.
- (2) All non-conforming product management procedures must describe how the identification, traceability and security of conforming lots are maintained and differentiated from non-conforming lots.

Guidance

- Where quarantine pests are identified within a lot, the lot may be subjected to:
 - A process that eliminates or removes the quarantine pest from the lot with the subsequent new lot being inspected to verify the pest removal/ treatment process has been effective; or
 - Treatment by an MPI approved treatment supplier undertaking an MPI approved treatment for the pest(s) of concern. Note: Re inspection of this treated product is not required;
 - Refer to MPI Plant Export Certification Standard Organisation Requirements (Part 1.3) or IVA requirements (Part 1.3) if you are seeking MPI approval for treatments.
- Fresh produce/Cut flowers and foliage:
 - Where the importing country does not specify a treatment for a specific pest, exporters may find the import treatment schedule contained in MPI's approved biosecurity treatments MPI-STD-ABTRT useful.
 - Alternative treatments (e.g. cold treatment, heat treatment, high volume washing) may be approved by MPI on a case by case basis. To gain approval a full set of treatment efficacy data must be submitted and validated by MPI.
- Seed:
 - The New Zealand Seed Quality Management Authority (SQMA) requires all lines of seed where any live insects are found to undergo MPI approved post-harvest treatments.
 - The industry agreed treatment is: Fumigate the seed lot with methyl bromide at 27g/m³ at 15 degrees C (or higher temperature) for 24 hours (CTP of 650 is required).
- Wood products:
 - Where the importing country does not specify a treatment for a specific pest, exporters may find the import treatment schedule contained in MPI's approved biosecurity treatments MPI-STD-ABTRT useful.

3.6 Identification of market phytosanitary eligibility

- (1) The organisation's documented procedures must describe how each inspected lot's market phytosanitary eligibility is identified.
- (2) Market phytosanitary eligibility identification procedures must:
 - a) describe the process and methods used to identify market phytosanitary eligibility of each lot;
 - b) ensure rejected product, non-conforming lots and uninspected product is clearly identified and segregated from plants products that have been inspected and cleared for export;
 - c) describe how any production site freedom ADs relating to a lot are identified and traceable back to the physical production site.

3.7 Records

- (1) Organisations must maintain records of:
 - a) All phytosanitary inspections undertaken. Records must:
 - i) be unique, (i.e. numbered, or traceable to a specific inspection lot);
 - ii) provide traceability back to:
 - facility name and/or location;
 - the approved inspector undertaking the inspection;
 - an identified consignment or homogeneous lot;
 - date and time (or time period start and finish) of inspection.
 - iii) capture:
 - the commodity/product type inspected;
 - lot size (units, weight or volume) and description;
 - the number of units inspected;
 - name and number of all pests and other phytosanitary criteria detected;
 - MPL or acceptance criteria, (as appropriate) used in the decision making process;
 - the decisions made (market suitability) and action taken as a result of the inspection;
 - signature (manual or electronic) of the inspector responsible for the inspection decision.
 - b) equipment calibrations and any calibration correction factors where applicable;
 - c) phytosanitary security checks undertaken while plant product(s) are stored at the inspection facility(s).

Guidance

- Electronic records are acceptable.
- Where there is more than one inspection the inspection record should reflect all inspection results.
- Where the person undertaking the inspection isn't the person making the final phytosanitary decision, this latter person needs to be competent to make phytosanitary decisions and their name contained in the register of competent staff.
- Electronic signatures should be managed in a way that other people cannot access and abuse it.

Appendix 1: 0.5% MPL Table 1a and 1b

Table 1a: Determining sample size and accept/reject numbers for a 0.5% MPL

Acceptance Numbers: MPL = 0.5%

Lot Size	Sample Size																										
	30-59	60-89	90-119	120-149	150-179	180-209	210-239	240-269	270-299	300-329	330-359	360-389	390-419	420-449	450-479	480-509	510-539	540-569	570-599	600-629	630-659	660-689	690-719	720-749	750-779		
1-29 *																											
30-59 *																											
60-89 *																											
90-119 *																											
120-149 *																											
150-179																											
180-209																											
210-239																											
240-269								0																			
270-299									0																		
300-329										0																	
330-359											0																
360-389												0															
390-419													0														
420-449														0													
450-479															1												
480-509																1											
510-539																	1										
540-569																		1									
570-599																			1								
600-629																				1							
630-659																					1						
660-689																						1					
690-719																							1				
720-749																								1			
750-779																									1		
780-809																										1	
810-839																											1
840-869																											1
870-899																											1
900-949																											1
950-999																											1
1000-1099																											1
1100-1199																											1
1200-1299																											1
1300-1399																											1
1400-1499																											1
1500-1999																											0
2000-2999																											0
3000-3999																											0
4000-4999																											0
5000-5999																											0
6000-6999																											0
7000-7999																											0
8000-8999																											0
9000-9999																											0
10000 +																											0

* The Entire Lot Must be Inspected

Whenever the entire lot is inspected the acceptance number is the largest whole number less than 0.5% of the lot size.

Table 1b: Determining sample size and accept/reject numbers for a 0.5% MPL

Acceptance Numbers: MPL = 0.5%

Sample Size	Acceptance Number	Lot Size
780-809	0	1-29
810-839	0	30-59
840-869	0	60-89
870-899	0	90-119
900-929	0	120-149
930-959	0	150-179
960-989	0	180-209
990-1019	0	210-239
1020-1049	0	240-269
1050-1079	0	270-299
1080-1109	0	300-329
1110-1139	0	330-359
1140-1169	0	360-389
1170-1199	0	390-419
1200-1299	0	420-449
1230-1259	0	450-479
1260-1289	0	480-509
1290-1319	0	510-539
1320-1349	0	540-569
1350-1379	0	570-599
1380-1409	0	600-629
1410-1439	0	630-659
1440-1469	0	660-689
1470-1499	0	690-719
1500-1529	0	720-749
	1	750-779
	1	780-809
	1	810-839
	1	840-869
	1	870-899
	1	900-949
	1	950-999
	1	1000-1099
	1	1100-1199
	1	1200-1299
	1	1300-1399
	1	1400-1499
	1	1500-1999
	1	2000-2999
	1	3000-3999
	1	4000-4999
	1	5000-5999
	1	6000-6999
	1	7000-7999
	1	8000-8999
	1	9000-9999
	1	10000 +

* The Entire Lot Must be Inspected

Whenever the entire lot is inspected the acceptance number is the largest whole number less than 0.5% of the lot size.

Appendix 2: 5% MPL Table 2a and 2b

Table 2a: Determining sample size and accept/reject numbers for 5% MPL

Acceptance Numbers: MPL = 5%

Lot Size	Sample Size																									
	30-59	60-89	90-119	120-149	150-179	180-209	210-239	240-269	270-299	300-329	330-359	360-389	390-419	420-449	450-479	480-509	510-539	540-569	570-599	600-629	630-659	660-689	690-719	720-749	750-779	
1-29 *
30-59 *
60-89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
90-119	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
120-149	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
150-179	0	0	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
180-209	0	0	1	2	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
210-239	0	0	1	2	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
240-269	0	0	1	2	3	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
270-299	0	0	1	2	3	4	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
300-329	0	0	1	2	3	4	5	6	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
330-359	0	0	1	2	3	4	5	6	7	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
360-389	0	0	1	2	3	4	5	6	7	8	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
390-419	0	0	1	2	3	4	5	6	7	8	9	10	11	11	11	11	11	11	11	11	11	11	11	11	11	
420-449	0	0	1	2	3	4	5	6	7	8	9	10	11	12	12	12	12	12	12	12	12	12	12	12	12	
450-479	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	13	13	13	13	13	13	13	13	13	13	
480-509	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	14	14	14	14	14	14	14	14	14	
510-539	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15	15	15	15	15	15	15	15	
540-569	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16	16	16	16	16	16	16	
570-599	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	17	17	17	
600-629	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	18	18	18	18	
630-659	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	19	19	19	19	
660-689	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20	20	20	
690-719	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	21	21	
720-749	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	22	
750-779	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1-29 *	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
30-59 *	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
60-89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
90-119	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
120-149	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
150-179	0	0	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
180-209	0	0	1	2	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
210-239	0	0	1	2	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		
240-269	0	0	1	2	3	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
270-299	0	0	1	2	3	4	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
300-329	0	0	1	2	3	4	5	6	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8		
330-359	0	0	1	2	3	4	5	6	7	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9		
360-389	0	0	1	2	3	4	5	6	7	8	9	10	10	10	10	10	10	10	10	10	10	10	10	10		
390-419	0	0	1	2	3	4	5	6	7	8	9	10	11	11	11	11	11	11	11	11	11	11	11	11		
420-449	0	0	1	2	3	4	5	6	7	8	9	10	11	12	12	12	12	12	12	12	12	12	12	12		
450-479	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	13	13	13	13	13	13	13	13	13		
480-509	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	14	14	14	14	14	14	14	14		
510-539	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15	15	15	15	15	15	15		
540-569	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16	16	16	16	16	16		
570-599	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	17	17		
600-629	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	18	18	18		
630-659	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	19	19	19		
660-689	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20	20		
690-719	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	21		
720-749	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
750-779	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		

* The Entire Lot Must be Inspected

Whenever the entire lot is inspected the acceptance number is the largest whole number less than 5% of the lot size.

Table 2b: Determining sample size and accept/reject numbers for 5% MPL

Acceptance Numbers: MPL = 5%

		Sample Size		Lot Size
780-809	780-809	35	3	780-809
810-839	810-839	35 37	3	810-839
840-869	840-869	35 37 38	3	840-869
870-899	870-899	34 36 38 39	3	870-899
900-929	900-929	34 35 37 39 41 42	3	900-929
930-959	930-959	33 35 37 39 40 42 43 45	3	930-959
960-989	960-989	33 34 36 38 39 41 43 45 47 47 49	3	960-989
990-1019	990-1019	32 34 35 37 39 40 42 44 45 47 49	3	990-1019
1020-1049	1020-1049	32 33 35 36 38 40 41 43 45 46 48 50 52 53 53	3	1020-1049
1050-1079	1050-1079	31 33 34 36 38 39 41 42 44 46 47 49 51 52 54 56 57 58 60	3	1050-1079
1080-1109	1080-1109	31 33 34 36 37 39 40 42 43 45 47 48 50 52 53 55 57 59 60 62 64	3	1080-1109
1110-1139	1110-1139	30 31 32 34 35 37 38 39 41 42 44 45 47 48 49 51 52 54 55 57 58 60 61 63 64	3	1110-1139
1140-1169	1140-1169	29 31 32 33 35 36 37 39 40 42 43 44 46 47 49 50 52 53 54 56 57 59 60 62 63	3	1140-1169
1170-1199	1170-1199	29 30 32 33 34 36 37 39 40 41 43 44 46 47 48 50 51 53 54 55 57 58 60 61 62	3	1170-1199
1200-1299	1200-1299	29 30 31 33 34 35 37 38 39 41 42 44 45 46 48 49 51 52 53 55 56 57 59 60 62	3	1200-1299
1230-1259	1230-1259	29 30 31 33 34 35 37 38 39 41 42 43 45 46 48 49 50 52 53 54 56 57 59 60 61	3	1230-1259
1260-1289	1260-1289	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1260-1289
1290-1319	1290-1319	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1290-1319
1320-1349	1320-1349	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1320-1349
1350-1379	1350-1379	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1350-1379
1380-1409	1380-1409	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1380-1409
1410-1439	1410-1439	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1410-1439
1440-1469	1440-1469	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1440-1469
1470-1499	1470-1499	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1470-1499
1500-1529	1500-1529	28 30 31 32 34 35 36 37 39 40 41 43 44 46 47 49 50 52 53 54 56 57 59 60 62	3	1500-1529
				1-29
				30-59
				60-89
				90-119
				120-149
				150-179
				180-209
				210-239
				240-269
				270-299
				300-329
				330-359
				360-389
				390-419
				420-449
				450-479
				480-509
				510-539
				540-569
				570-599
				600-629
				630-659
				660-689
				690-719
				720-749
				750-779
				780-809
				810-839
				840-869
				870-899
				900-949
				950-999
				1000-1099
				1100-1199
				1200-1299
				1300-1399
				1400-1499
				1500-1999
				2000-2999
				3000-3999
				4000-4999
				5000-5999
				6000-6999
				7000-7999
				8000-8999
				9000-9999
				10000 +

* The Entire Lot Must be Inspected

Whenever the entire lot is inspected the acceptance number is the largest whole number less than 5% of the lot size.

Appendix 3: Guidance on determining sample size and accept/reject numbers

Guidance: Determining sample size and accept/reject numbers.

- MPI have developed the following MPL acceptance number tables for inspection organisations that are required to document a sampling plan that provides at least a 95% confidence level that the incidence of specified pests within the lot does not exceed a predefined MPL.
- Which MPL table should you use?
 - The 0.5% MPL tables (Table 1a and 1b) should be used where the importing country has listed their quarantine pests in their official importing country requirements (i.e. ICPR, import permit).
 - The 5% MPL table (Table 2a and 2b) should be used where the importing country phytosanitary requirements are not known or the quarantine pests of the importing country are not known.
- What is the homogenous lot size?
 - Once you have selected the appropriate table you then need to understand the size (i.e. number of units) of the lot you are selecting the sample from. This method of sampling is based on a predefined lot size (NB: you need to know the size of the lot before you start sampling) so you can't keep increasing the size of the lot once you have started to select your sample.
 - Your lot size is the total number of units available in the homogenous lot (e.g. the number of individual fruit, flower stems, logs or boards of sawn timber)
 - Usually this is a simple calculation of the number of packaging units you have in the lot (e.g. number of bins, cartons, trays, punnets, packets, bags) multiplied by the average number of units in the package to be inspected.
 - Examples include;
 - 200 cartons of apples with an average of 100 apples per carton creates a lot size of approximately 20,000 apples.
 - 50 boxes of flowers at 15 stems per box is a lot size of 750 stems.
 - 10 packets of timber with average of 620 boards per packet is a lot size of 6,200 boards.
- How do I determine the number of units to be sampled for inspection?

Select the MPL acceptance numbers table:

- Firstly, look down the left column of the table and identify the range that includes your lot size. In many cases the lot size will be 10,000+ (refer to the example below) but with small lines this may be any size from a few to any number up to 10,000.
- Once the correct lot size range is identified, work across the page (a ruler may be helpful) until you come to the first character.
- If it is an * this means you will need to inspect 100% of the lot. Where this character is a zero work down the column to the horizontal axis on the Table. This indicates the minimum number of units to be sampled from the homogenous lot for inspection in order to make a decision.
- Should you want to select a larger sample size this would normally allow you to detect and accept more pests in the sample. This method of operating means inspection of more units per homogenous lot and having to inspect the full sample even if you are not finding pests.
 - In the example below, to be able to find and accept 1 pest in an inspection sample refer to Table 1b, sample and inspect a minimum of 960-989 units.

Example: calculating the minimum sample size to make a valid decision for a 10,000+ unit lot with an acceptance number of zero or one.

