

MAFBNZ Phytosanitary Compliance Programme for the Export of Apples to Taiwan

Growers and Packers Module 2009-2010

V1



Version Control

This section captures changes in subsequent version(s) of the document for maintaining record(s) and easy reference.

Document versions are not numbered. Version control is achieved by reference date in the footer of the document.

All programme participants must use and refer to the latest version of the document.

The changes are listed in the table below:

No.	Version date	Section Changed	Change(s) Description
1.	31 July 2009	The first final edition	n/a

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PART 1 INTRODUCTION

This document is one of three modules that form the basis of an integrated system's approach to meet Taiwan's phytosanitary requirements. Specifically, this module outlines the requirements to be met by growers and packers of apples for export to Taiwan. The other two modules are focussed on the requirements for coolstores and exporters, and IVAs.

This compliance programme addresses Taiwan's "Quarantine Requirements for the Importation of Apples from Countries or Districts Where Codling Moth Is Known to Occur," and realigns these requirements into an operational sequence to expedite the entry of New Zealand apples into Taiwan.

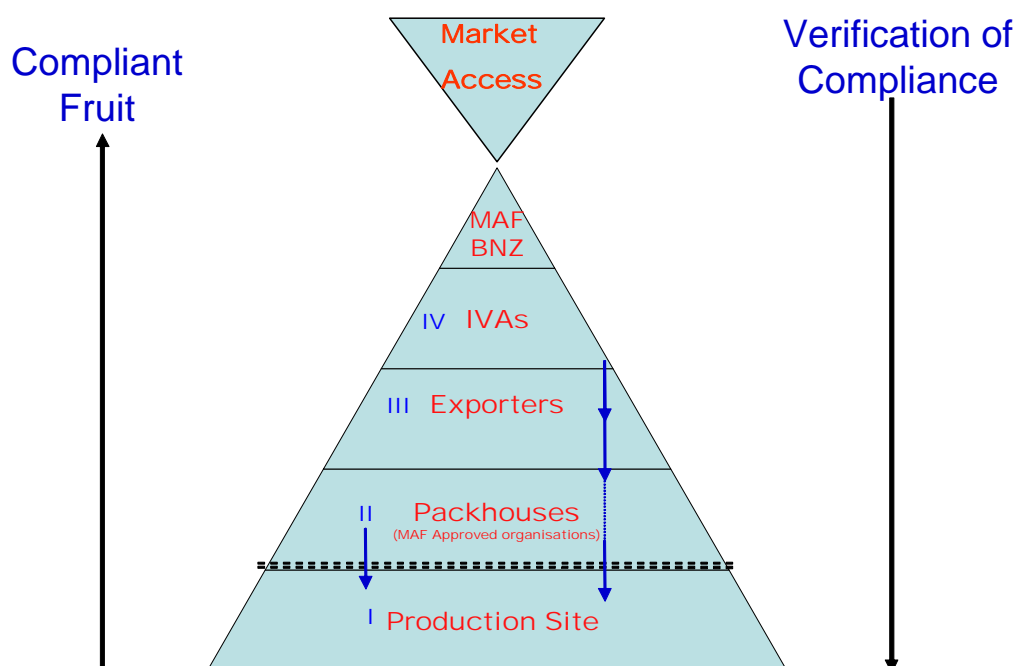
The export of apples from New Zealand to Taiwan is subject to meeting the import phytosanitary requirements for the crop specified by Taiwan.

IMPORTANT NOTES:

1. This programme represents the minimum requirements for the control of codling moth in apples exported from New Zealand to Taiwan.
2. Growers who have been withdrawn from the programme during the last season because of a codling moth interception and growers who are new to the programme (i.e. have not exported apples to Taiwan previously) will need to meet additional programme requirements.

This compliance programme vertically integrates the production, packing, storage and export phases within the product pathway for export to Taiwan (Figure 1).

Figure 1: Model for the phytosanitary compliance programme for the export of apples to Taiwan from 2007/08 onwards



The following table summarizes type and frequency of verification checks conducted by various programme participants.

Table1: Summary of Verification Checks utilized in the compliance programme

Programme participants	Verification Checks	
	Type	Frequency
Registered Growers	Trap surveys	Weekly
MAF Approved organisations or IVAs	Compliance monitoring of registered growers	At least twice during the season. A proportion (10%) of sites operating in March will have the third audit.
IVAs	Audit of MAF Approved Organisations in the production phase	At least twice during the production phase. A proportion (10%) of organisations monitoring production sites in March will have the third audit.
	Audit of MAF Approved Organisations in the packing/storing/exporting phase	Refer MAF BNZ Export Certification Standard: Organisation Requirements
	System Audit	Refer MAF BNZ Export Certification Standard: Organisation Requirements
MAFBNZ	A verification audit of IVAs services to the programme	In discretion of MAFBNZ Director Border Standards

Each phase within this programme can only be successfully completed if the previous phase below has been conducted to the highest standard. This method of operating the compliance programme places emphasis on the codling moth pest management where it can be best controlled – the production site. The New Zealand Pipfruit Industry’s Integrated Fruit Production Programme (IFP) forms the technical basis for codling moth pest management.

This revised programme recognises the packing organisations’ role in assessing how best to manage their risks associated with obtaining apples from their supplying registered production sites. Accordingly, packing organisations now have the option of taking responsibility to monitor and verify their grower production sites’ compliance with the codling moth trapping and pest management requirements.

This recognises New Zealand’s packing organisations’ activities becoming more integrally linked with a increased number of production and marketing aspects. To best facilitate this compliance programme and minimise the risk of failure, packing organisations now need to be MAF approved Organisations to undertake an increased level of export phytosanitary activities.

The packing organisations’ overall performance in operating their documented and MAF approved systems is audited by IVAs.

Coolstore and Exporter organisation performance will be addressed in a separate module aimed at ensuring compliance to product security requirements and accuracy of export documentation.

KEY CONTACTS

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Registers of compliant participating parties within this programme are identified upon the MAF website:

<http://www.biosecurity.govt.nz/regs/exports/plants/compliance>

PART 2 GROWER REQUIREMENTS

2.1 Application for registration of production site(s)

Requirement Number	Requirement Growers must:	Notes:
1.	Apply to register their production site(s) by 8 September each year.	<ul style="list-style-type: none"> • Registration is coordinated by Pipfruit NZ Inc. on behalf of MAFBNZ. • Registration information will be sent directly to all existing registered growers in July of each year. • The previous season's phytosanitary inspection records determine the risk status of the production site. • High risk production sites MUST use mating disruption (Refer Section 2.8) to be eligible to register for the Taiwan programme.
2.	Submit a map with their registration showing Taiwan registered production sites, Taiwan registered varieties within the production site and the position and identification of CM traps.	<ul style="list-style-type: none"> • A copy of the map is to be retained by the grower for compliance checking • Maps need to annotate north direction, show individual trap ID numbers, row numbers or have marked trees at the end of rows which will assist independent surveyors with locating each pheromone trap. • If a Taiwan registered production site contains more than one variety block of a variety intended for Taiwan registration then all variety blocks of that variety within the production site must be registered and treated as per the programme requirements for the entire season. Please refer section 2.2.2. • Refer to the Guideline on How to define production sites? Appendix 3 of this programme. • Please note section 2.2.4 Spray diaries are to be

		<p>defined as per your Taiwan production site registration for RPIN, production site and registered varieties definitions.</p>
<p>3.</p>	<p>Include with their registration information their intended packing organisation and contact details.</p> <p><u>Important note – Compliance monitoring frequency:</u> Each grower’s codling moth surveying and pest management programme must be checked for compliance at least once:</p> <ol style="list-style-type: none"> 1. Following trap placement in October 2. During mid January through to mid March but before the first harvest based on the dominant variety mix 3. During early March to the end of March – randomly selected 10% of the total of all productions sites that have dominant varieties coming into harvest in February <u>AND</u> in/after March. 	<ul style="list-style-type: none"> • The grower can nominate a MAF approved packing organisation or <u>nominate an IVA</u> or other MAF Approved Organisation (AO) to monitor compliance to the programme. This information will be held on the PNZI website so all AOs can see that all production sites have someone responsible for their audit requirements. • The grower needs to ensure production site records are transferred/available to their final compliance monitoring organisation if changes occur. • If a grower wishes to change the AO that is auditing their property for compliance to the programme then the grower is to contact all AOs in the process i.e. packhouse or survey organisation, IVA and PNZI. <i>(PNZI provides support by ensuring that all organisations involved in the transfer have been notified and that transfer has occurred so that growers do not find their productions sites non-compliant due to change over process.)</i> • Where AOs are contracted to monitor grower’s compliance to trapping and pest management requirements, additional contact may be required to confirm confidence that the programme requirements are being met. • Where a grower disagrees with a decision made by an IVA/AO monitoring its compliance, the grower may contact one level up i.e. his/her IVA or MAFBNZ and seek further clarification.

		<p>The appropriate procedure will be posted on MAFBNZ's website</p> <ul style="list-style-type: none"> The grower must indicate to its Approved Organisation during the time of the initial audit if there are Taiwan registered varieties scheduled for harvest in February (e.g. Royal Gala) <u>AND</u> in/after March (e.g. Fuji). Those that fail to provide accurate information will be scheduled for the third audit in excess of the 10% of randomly selected production sites.
4.	Attend a PNZI coordinated pre-season workshop on the programme requirements for CM trapping and pest management.	<ul style="list-style-type: none"> Failure to attend a workshop will preclude participation in the Apples to Taiwan programme. Workshop details will be provided to all registered growers. Direct all enquiries to PNZI.

2.2 Production Site Requirements

Requirement Number	Requirement Each Taiwan production site must	Notes:
1.	<p>Be a minimum of 1 hectare.</p> <p><i>UNLESS</i> the area is a planting of <i>new, restricted, trial varieties</i></p>	<ul style="list-style-type: none"> Organic producers refer section 2.9 for additional requirements Smaller areas with new restricted, trial varieties may be included but will have to be monitored trapped and treated (CM managed) as per this programme.
2.	<ul style="list-style-type: none"> Be trapped and managed for CM in its entirety as a separate area until 31 December (Taiwan and non-Taiwan varieties) Be trapped for CM in its entirety as a separate area from 1 January (Taiwan and non-Taiwan varieties) Be managed for CM only in Taiwan registered varieties within the registered production site must from 1 January. 	<ul style="list-style-type: none"> This also applies where the entire RPIN is registered for Taiwan as one production site. If a Taiwan registered production site contains varieties NOT registered for Taiwan these plantings are still to be included in the overall area to be trapped and traps placed in these varieties must continue to be monitored and responded to throughout the season (Ref. 2.4) Refer to the Guideline on how to define production

		<p>sites. Appendix 3 of this programme.</p> <ul style="list-style-type: none"> Refer to Appendix 2: Definitions & Acronyms on Taiwan Registered Production Site and Registered Varieties
3.	Be harvested & packed as separate lines	<ul style="list-style-type: none"> If CM is found during harvest/packing (irrespective of market packed for) only the affected Taiwan production site will be removed from the programme. Individual bin cards or submission forms are to be sufficiently detailed to enable the packhouse to confirm the Taiwan production eligibility of the fruit based on your registration of the production site
4.	Correspond with those on your spray diary and orchard map	<ul style="list-style-type: none"> Spray diaries are to be defined as per your Taiwan production site registration for RPIN, production site and management area definition The updated spray diary information needs to be available for compliance checking purposes. It is highly recommended that growers check their registration as per the MAFBNZ website by 10 January annually to ensure the details are correct prior to harvest commencing

2.3 Codling Moth Trapping and Surveying Staff Requirements

Requirement Number	Requirement	Notes:
1.	All production sites must institute a codling moth trapping programme using standard 1mg (1x) concentration pheromone caps unless they are operating codling moth mating disruption. In this case 10mg (10x) concentration pheromone caps must be used in the monitoring programme.	<ul style="list-style-type: none"> Growers operating low risk production sites may elect to undertake trap monitoring themselves. High risk and Organic production sites – refer Sections 2.8 and 2.9 for additional requirements.
2.	Codling moth trapping survey staff must:	<ul style="list-style-type: none"> Refer to "MAF BNZ Export Certification Standard:

	<p>1. Meet the competency requirements of pest survey personnel specifically in relation to:</p> <p>a) CM trap placement, surveying and maintenance; and</p> <p>b) Ability to identify codling moth in the traps.</p> <p>2. Be maintained on the appropriate MAF Approved Organisation's (e.g. packhouse's, pest survey organisation's or IVA's) register of competent phytosanitary staff.</p>	<p>Technical Requirements: Pest Survey" for competency requirements</p> <ul style="list-style-type: none"> • Growers and other pest survey organisations may become MAF Approved Organisations for survey purposes. (Refer to MAFBNZ Export certification System Standards.) • Codling moth trapping survey staff assessed as competent by one approved organisation do not need to be reassessed by the other organisation in the same growing season. Proof of competency will be however required (e.g. an official note/letter from an organisation confirming competency of an individual).
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2.4 Key Trapping Dates

Requirement Number	Requirement	Notes:
1a.	<p><u>North Island</u></p> <ul style="list-style-type: none"> • Traps must be placed within designated production site(s) on or before 15 October annually. • Traps must be charged with pheromone caps and bases on or before the seventh day after the first mandatory spray application based on BIOFIX + 80-110 GDD • CM trap surveys must start 7 days after traps have been charged with pheromone caps and bases as above • CM trap surveys must continue until 31 March 	<ul style="list-style-type: none"> • The trapping close off date is to be observed unless all Taiwan destined varieties within the production site have been harvested. • Growers should notify their AOs if they have not received the first audit prior to the first mandatory spray being applied • Refer Guideline G2 for BIOFIX dates • Trap maintenance requirements falling within the period of the final week of trapping for the season do not need to be carried out as this will have no bearing on the final outcome this late in the season
1b.	<p><u>Nelson and Canterbury</u></p> <ul style="list-style-type: none"> • Traps must be placed within designated production site(s) on or before 15 October 2008. • Traps must be charged with pheromone caps and bases on or before the seventh day after the first mandatory spray 	<ul style="list-style-type: none"> • The trapping close off date is to be observed unless all Taiwan destined varieties within the production site have been harvested. • Growers should notify their AOs if they have not received the first audit prior to the first mandatory spray

	<p>application based on BIOFIX + 80-110 GDD</p> <ul style="list-style-type: none"> • CM trap surveys must start 7 days after traps have been charged with pheromone caps and bases • CM trap surveys must continue until 15 March 	<p>being applied</p> <ul style="list-style-type: none"> • Refer Guideline G2 for BIOFIX dates • Trap maintenance requirements falling within the period of the final week of trapping for the season do not need to be carried out as this will have no bearing on the final outcome this late in the season.
1c.	<p><u>Otago</u></p> <ul style="list-style-type: none"> • Traps must be placed within designated production site(s) on or before 5 November 2008. • Traps must be charged with pheromone caps and bases on or before the seventh day after the first mandatory spray application based on BIOFIX + 80-110 GDD CM trap surveys must start 7 days after traps have been charged with pheromone caps and bases • CM trap surveys must continue until 15 March 	<ul style="list-style-type: none"> • The trapping close off date is to be observed unless all Taiwan destined varieties within the production site have been harvested. • Growers should notify their AOs if they have not received the first audit prior to the first mandatory spray being applied Refer Guideline G2 (Appendix 4) for BIOFIX dates Trap maintenance requirements falling within the period of the final week of trapping for the season do not need to be carried out as this will have no bearing on the final outcome this late in the season.

2.5 Trapping Density and Location of Codling Moth Traps

Requirement Number	Requirement	Notes:
1.	Traps density within designated production site(s) must meet a minimum of 1 trap per hectare.	<ul style="list-style-type: none"> • Where a part hectare is included then the trap number is rounded according to 'Swedish rounding' i.e., 0.0-0.49 (ha) is rounded DOWN and 0.5-0.99 is rounded UP such that an additional trap is required.

2.	<p>Traps must be placed in apple trees:</p> <ol style="list-style-type: none"> 1. A minimum of 50m apart. 2. Between 5m - 25m in from the outside row and from the end of rows of trees. 3. In the top 10% of the canopy as at the time of first trap placement 4. At least 4 metres away from other (non-codling moth) pheromone traps 	<ul style="list-style-type: none"> • Trap placement within designated production sites may be biased towards high CM pressure areas of the production site(s) where these exist but must still meet a minimum density requirement. • Remember to indicate your trap locations and unique trap ID on your Taiwan production site map (please refer 2.6.1).
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2.6 Traps Surveying and Maintenance

Requirement Number	Requirement	Notes:
1.	Every CM trap must be identified with the RPIN and a unique trap identification number (ID).	<ul style="list-style-type: none"> • The RPIN and trap ID is to be written in permanent marker pen on the permanent body of the trap.
2.	CM traps must be checked at least every 7 days during the monitoring period and any CM finds recorded in the pest monitoring sheets of the grower's field book (or equivalent).	<ul style="list-style-type: none"> • Remove any codling moth(s) trapped from the base by use of a knife or a similar flat scraper.
3.	<p>CM trapping records must:</p> <ol style="list-style-type: none"> i) Contain the number of moths trapped for that week; ii) Contain the date of inspection; iii) Contain the initials of the registered trap surveyor; iv) Contain trap maintenance records (e.g. replacement of pheromone cap and/or base). v) Be complete and accurate; vi) Be immediately available to the grower's MAFBNZ Approved Survey Organisation (either as hardcopy and/or electronic) for compliance checking. 	<ul style="list-style-type: none"> • All pest survey information collected within this programme is the property of MAF to facilitate phytosanitary certification. • CM pest survey information is to be made available to at least the next level up in the integrated regulatory model (Refer Figure 1). • Refusal to supply pest survey data will automatically exclude the grower's production sites from this programme and MAF certification. • All pest survey data associated with this programme is being collated by PNZI on behalf of the programme management team to monitor performance of the programme and enable improvements to be instituted based on sound field data. • This data will also be used to identify codling moth flight

		activity in growing districts.
4.	Purchase records for CM pheromone caps and trap bases must be retained for compliance checking.	<ul style="list-style-type: none"> • Ensure cap expiry date has not been exceeded, & the caps are stored as per specifications.
5.	Trap bases must be replaced every 3 weeks.	<ul style="list-style-type: none"> • Trap bases may need to be replaced more often if dust or other contaminants affect the trapping efficiency
6.	Pheromone lures (caps) must be replaced every 6 weeks.	<ul style="list-style-type: none"> • Do not throw away any caps on-orchard, double bag them and dispose of them off-orchard.

2.7 Codling Moth Pest Management Requirements

Requirement Number	Requirement	Notes:
1.	<p>All production sites must institute a compulsory codling moth pest management programme as defined in Guideline G2.</p> <p>Applications of all sprays for codling moth control must be applied in the entire production site up to 31 December in any year.</p> <p>As of 1 January growers must continue monitoring CM population in the entire registered production site (Taiwan registered and non-Taiwan varieties) and must treat Taiwan registered varieties within Taiwan registered production sites if trap threshold criteria are exceeded.</p> <p>Where the following CM trap thresholds are exceeded:</p> <p><i>Until 31 December in the North Island only and for the whole season in the South Island</i></p> <p>i. Five or more moths in any single trap in any calendar week</p> <p>Or</p> <p>ii. An average of two or more moths over all the traps in the production site</p> <p>Or</p> <p>iii. An accumulation of ten moths in any single trap since the last codling moth or codling moth active-leafroller insecticide</p> <p><i>From 01 January in the North Island only:</i></p>	<ul style="list-style-type: none"> • Refer 2.2.2 for the production site requirements • Mating disruption may be used within a production site without affecting risk status of the production site. • Where these thresholds are exceeded the grower has the option of undertaking CM pest management or withdrawing their production site from the programme. • Refer Guideline G2 for pest management recommendations • For duration of CM trapping refer Section 2.4. • If a variety within a Taiwan production site has been completely harvested and a CM trap threshold within the site is exceeded, CM pest management is to be applied to the remaining varieties only. • Once ALL Taiwan destined varieties within the site are harvested, all other non-Taiwan varieties cease to be governed by this compliance programme. • If a trap reads under an accumulation of 10 moths prior to 1 Jan then no action is required. If at the first reading after 1 Jan the

	<p>iv. Five or more moths in any single trap in any calendar week</p> <p>Or</p> <p>v. An average of two or more moths over all the traps in the production site</p> <p>Or</p> <p>vi. An accumulation of five moths in any single trap since the last codling moth or codling moth active-leafroller insecticide</p>	<p>accumulation is 5 moths or higher then Taiwan registered varieties within the Taiwan registered production site must be treated with a CM active spray</p>
2.	<p>CM pest management records must be maintained in the spray diary for the production site, and the grower's MAF approved organisation notified of measures taken.</p>	<ul style="list-style-type: none"> • These records and trap survey records will be cross-checked by the MAF approved organisation to verify compliance with the programme's requirements.
3.	<p>1. Where a CM high pressure situation occurs (refer definitions) the grower must consult with their MAF approved organisation with regard to the success of their management programme or their option of withdrawing the production site from the programme. This is to minimize the risk to the packing organization and the overall programme.</p> <p>2. If live codling moth larvae are seen within the production site, the production site must be withdrawn from the Taiwan programme for that season.</p>	<ul style="list-style-type: none"> • If the grower decides to withdraw once harvesting is underway they need to ensure apples are submitted as "non-Taiwan suitable", and notify their compliance monitoring organisation of this decision in writing. • At least one seasons' combined mating disruption and spray programme is recommended to reduce codling moth pressure to levels that are not constantly exceeding thresholds.

2.8 High Risk Production Sites Additional Requirements

Requirement Number	Requirement	Notes:
1.	<p>The registration requirements of section 1 must be met.</p>	
2.	<p>A mating disruption programme must be instituted within a high risk production site.</p> <p>The Taiwan production site(s) must:</p> <ul style="list-style-type: none"> - Be free of apples that remain untreated for CM. 	<ul style="list-style-type: none"> • The previous season's phytosanitary inspection records of live codling moth detection(s) determine the risk status of the production site. Voluntary withdrawal from the programme in the previous season does NOT constitute a high risk status. • Refer Guideline G2 for mating disruption

		<p>programme recommendations.</p> <ul style="list-style-type: none"> • Ideally the site should be: <ul style="list-style-type: none"> a) nearly square in shape; b) relatively sheltered and flat c) free of walnut trees which can act as an alternate host for CM
3.	<p>All requirements of Section 2.1 – 2.6 are applicable on high risk sites except, in addition:</p> <p>The CM traps must be:</p> <ul style="list-style-type: none"> • baited with 10mg “10x concentrate” codling moth pheromone caps; • surveyed by a MAF approved pest survey organisation. 	<ul style="list-style-type: none"> • These trapping specifications are a result of implementing a mating disruption programme. • Refer section 2.6 for CM trap surveying and maintenance • Independent monitoring is to be carried out at the registrant’s cost. • Growers may opt for self-monitoring in the following season if they have a year without codling moth larva detection in the pathway.
4.	<p>At harvest, a competent codling moth inspector must inspect at least 1000 apples in total spread evenly across 10 bins of harvested apples from each Taiwan destined variety during the first harvest for the presence of live CM and damage.</p> <p>If fewer than 10 bins are harvested the 1000 fruit sample should be spread evenly across all harvested bins.</p>	<ul style="list-style-type: none"> • If live codling moth is identified during this inspection process, the production site is to be removed from the programme for the remainder of the season.

2.9 Organic Production Sites Additional Requirements

Requirement Number	Requirement	Notes:
1.	The registration requirements of section 1 must be met.	
2.	A mating disruption programme must be instituted within grower defined organic production site(s).	a) Refer Guideline G2 for mating disruption programme recommendations.
3.	<p>All requirements of Section 2.1 – 2.6 (inclusive) are applicable on organic production sites except, in addition:</p> <p>The CM traps must be:</p> <ul style="list-style-type: none"> • baited with 10mg “10x concentrate” codling moth pheromone caps; 	<ul style="list-style-type: none"> • These trapping specifications are a result of implementing a mating disruption programme. • Refer section 2.6 for CM trap surveying and maintenance.

4.	<p>The Taiwan production site(s) must:</p> <ol style="list-style-type: none"> 1. Not exceed a 2:1 length: breadth ratio; 2. Be free of apples that remain untreated for CM and free of walnut trees which can act as an alternate host for CM 	<ul style="list-style-type: none"> • In order to maximize the impact of CM mating disruption, the site should be: <ol style="list-style-type: none"> a) nearly square in shape; b) relatively sheltered and flat
5.	<p>At harvest, a competent codling moth inspector must inspect at least 1000 apples in total spread evenly across 10 bins of harvested apples from each Taiwan destined variety during the first harvest for the presence of live CM and damage.</p> <p>If fewer than 10 bins are harvested the 1000 fruit should be spread evenly across all harvested bins.</p>	<ul style="list-style-type: none"> • If live codling moth is identified during this inspection process, the production site is to be removed from the programme for the remainder of the season.
6	<p>Ensure all apples from the production site(s) destined for export to Taiwan are submitted to a MAF approved (and registered for Taiwan packing) packhouse organisation.</p>	<ul style="list-style-type: none"> • If live codling moth is identified during this inspection process, the production site is to be removed from the programme for the remainder of the season.

PART 3 PACKHOUSE REQUIREMENTS

3.1 Registration Requirements

Requirement Number	Requirement	Notes:
	All packhouse organisations participating in the Apples to Taiwan Programme must:	
1.	Be a MAF Approved Organisation	<ul style="list-style-type: none"> Refer MAF BNZ Export Certification Standard: Organisation Requirements
2.	Register their facilities with their preferred IVA by 10 October annually	<ul style="list-style-type: none"> Registration form is in Appendix 5 of this module Do not send your registration form directly to MAF BNZ. The IVA will contact you and arrange an audit schedule of your MAF approved system. Where the packhouse and the coolstore are on the same site and owned and operated as one business entity, only one registration application will be required. A packhouse organisation with more than one packing facility housed separately has an option of registering into the programme each individual packing facility separately.
3.	Develop, maintain and communicate their register of grower production sites to their IVA within 5 working days of the register being updated.	<ul style="list-style-type: none"> This register will need to contain the growers' name & contact details, their RPIN number and the unique Taiwan production site(s) numbers.

3.2 Grower monitoring requirements

Requirement Number	Requirement	Notes:
	All packhouse organisations participating in the Apples to Taiwan Programme electing to undertake compliance monitoring of supplying growers must:	
1.	Document as part of their MAF approved Organisation's system, procedures for	<ul style="list-style-type: none"> Refer: "MAF BNZ Export Certification Standard: Technical Requirements:

	<p>monitoring the compliance of their growers to the grower requirements (refer Part 2 of this module).</p>	<p>Pest Survey” for competency requirements.</p> <ul style="list-style-type: none"> • Packers may either document their own procedures or adopt MAF pre-approved procedures. Contact your IVA to obtain these pre-approved procedures.
2.	<p>Ensure packhouse personnel (Survey monitoring staff) monitoring their growers’ compliance to the grower requirements (refer of Part 2 of this module).</p> <ol style="list-style-type: none"> 1. Meet the competency specifications of pest survey inspectors. 2. Have knowledge of the following programme requirements: <ul style="list-style-type: none"> • Trap placement, monitoring and maintenance; • Ability to identify codling moth in the traps. 3. Are maintained on the MAF Approved Organisation’s register of competent phytosanitary staff. 	<ul style="list-style-type: none"> • Refer: MAF BNZ Export Certification Standard: <ul style="list-style-type: none"> ○ Organisation requirements ○ Technical Requirements: Phytosanitary Inspection. ○ Technical Requirements: Pest Survey. • The packhouse organisations may utilise their approved Staff competency process and extend the scope of this to include pest survey monitoring staff.
3.	<p>As a minimum monitor each of their growers surveying and pest management programme at least once:</p> <ol style="list-style-type: none"> 1. Following trap placement in October 2. During mid January through to mid March but before the first harvest based on the dominant variety mix 3. During early March to the end for March – randomly selected 10% of the total of all productions sites that have dominant varieties coming into harvest in February <u>AND</u> in/after March. 	<ul style="list-style-type: none"> • Any additional monitoring is determined by the confidence level established in those undertaking the trap surveys & making decisions on pest management. • Those approved organisations monitoring compliance on less than 10 production sites must select at least one production site for the compliance check. • Where a part number is included then the number is rounded according to ‘Swedish rounding’ i.e., 0.0-0.49 sites to be rounded DOWN and 0.5-0.99 is rounded UP such that an additional site is required.
4.	<p>Submit to PNZ, at least monthly for the months of October to March (inclusive), a copy of the growers’ trap monitoring records and the results of their grower compliance monitoring activities.</p>	<ul style="list-style-type: none"> • All pest survey data is being collated by PNZ on behalf of the programme management team to monitor codling moth flight & pest management activity. • Pest survey data needs to be available for IVA auditing.

5.	Submit to their IVA within 24 hours of detection any non-compliance associated with a registered production site.	
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3.3 Packhouse facility requirements

Requirement Number	Requirement	Notes:
	All packhouse organisations and all their respective registered packhouses participating in the Apples to Taiwan Programme must:	
1.	Possess a unique MAF Biosecurity New Zealand identification code	<ul style="list-style-type: none"> The code will be confirmed by MAFBNZ (via the IVA) after the packhouse organisation has applied for and meets registration requirements (verified by an IVA).
2.	Ensure appropriate packhouse staff have an understanding of the Taiwan Programme as it relates to apples: freedom from codling moth, familiarity with other Taiwan quarantine organism maximum pest levels (MPLs), packing and labelling requirements.	
3.	Ensure appropriate control measures have been taken to eliminate live plant pests within the packhouse prior to the beginning of the Taiwan programme.	<ul style="list-style-type: none"> Where an insecticide (with an approved MRL for Taiwan) is used to control pests in the pack house, it must be applied when the packhouse is free of apples
4.	Provide grading and sizing equipment suitable for sorting and grading to meet the Taiwan phytosanitary packing & labelling requirements.	<ul style="list-style-type: none"> Refer section 3.4 below.
5..	Provide appropriate phytosanitary inspection facilities and equipment.	<ul style="list-style-type: none"> Refer MAF Biosecurity New Zealand Exports Standard Technical Requirements: Phytosanitary Inspection It is highly recommended to reduce surface infestation of actionable pests other than CM that the packhouse operate a high pressure apple washer as per industry specifications (see www.pipfruitnz.co.nz > library > post harvest > general)

3.4 Packing requirements

Requirement Number	Requirement	Notes:
	All packhouse organisations participating in the Apples to Taiwan Programme must:	

1.	Monitor submissions from growers' production sites to ensure the bins of harvested apples are identified with at least the appropriate RPIN and unique registered production site number.	<ul style="list-style-type: none"> For example, the use of bin cards
2.	Ensure apples are sorted at least twice before packing to remove all codling moth deformed or damaged (graded) fruits.	<ul style="list-style-type: none"> Acceptable sorting operations include; <ul style="list-style-type: none"> i) inspection during the harvest operation, and ii) as harvested apples are graded on the packhouse sorting table. Downgraded apples are to be placed in receptacles and discarded or destroyed every day. Where packhouses are undertaking additional monitoring and/or checks for the presence of CM, these actions need to be documented in your MAF approved organisation system for these actions to be verified and formally recognised.
3.	<p>For lines destined for export to Taiwan from registered production sites inspect for presence of codling moth and other quarantine pests:</p> <p>A minimum of 600 apples from no more than 300 TCEs (or part thereof) per homogenous grower line for compliance to Taiwan's phytosanitary import requirements;</p>	<ul style="list-style-type: none"> Taiwan registered varieties from Taiwan registered production sites are to be checked through phytosanitary inspection regimes for codling moth irrespective of the market they are being packed for. As a means of more accurately sampling apples for confirming compliance to Taiwan's requirements for freedom from codling moth, packers are encouraged to adopt the random auto drop (RAD) sampling process, or equivalent, where ever possible. An equivalent means may include taking sub-samples not exceeding 20 apples at a time (e.g. a fibre tray of fruit). <p>It is STRONGLY RECOMMENDED, but not compulsory, that all packers:</p> <ul style="list-style-type: none"> For lines destined for export to Taiwan, undertake a reject analysis of at least 100 apples per grower line

		<p>for the presence of live CM, during the grading and packing process.</p> <ul style="list-style-type: none"> • Attach these additional phytosanitary results to the phytosanitary inspection record. • If one grower line is packed over a period of longer than 1 day then inspect 100 reject apples per grower line per day. • The format for this data transfer is available from the PIITSA website. • This data is being collated by PNZI on behalf of MAFBNZ & the programme management team. • If CM detection in Taiwan is made this measure will become compulsory.
4.	Submit to PNZI, at least on a monthly basis during the time period apples are being packed for Taiwan, a copy of all phytosanitary inspection records relating to apples destined for export to Taiwan.	<ul style="list-style-type: none"> • Forward this information to mike.butcher@pipfruitnz.co.nz. This data is being collated by PNZI on behalf of the programme management team to monitor the performance of the programme.
5.	Reject the grower line from export to Taiwan when a live codling moth larva is found in fruit from Taiwan registered varieties from a Taiwan registered production site at any point of the packhouse operation.	<ul style="list-style-type: none"> • This includes detections within inspection programmes for any other markets. • A rejected line may not be reconditioned or resubmitted for export to Taiwan. • Apples from the production site must be excluded from the Taiwan Export Programme for the remainder of the season.
6.	Reject a consignment for export to Taiwan when the acceptance level for quarantine pests other than codling moth is exceeded in the lot of apples packed/destined for Taiwan.	<ul style="list-style-type: none"> • The acceptance level for Quarantine pests is specified in the ICPR for Taiwan and “MAF BNZ Export Certification Standard: Technical Requirements: Phytosanitary Inspection” for competency requirements. • Apples from a rejected lot may not be reconditioned or

		resubmitted for export to Taiwan.
8.	<p>Notify, within 4 working hours (of the codling moth find), their IVA of the following details:</p> <ol style="list-style-type: none"> 1. The non-compliant production site registration details. 2. The actions taken with the affected grower line. 3. Location of and pallet list for Taiwan registered varieties from Taiwan registered production site in coolstore(s) from the affected grower. 4. Location, pallet list, dispatch date(s) and the name and contact details of the organisation to which the affected grower's product has been consigned. 5. Location of and consignment details (phytosanitary certificate number & pallet list with carton numbers) for product from the affected grower's production site in transit to Taiwan "on the water". 6. Notify the supplying grower of the codling moth interception. 	

3.5 Product traceability and post inspection security

Requirement Number	Requirement	Notes:
	All packhouse organisations participating in the Apples to Taiwan Programme must:	
1.	<p>Maintain an inventory system that identifies:</p> <ul style="list-style-type: none"> • Production sites from which apples are being sourced from • MAFBNZ registered coolstore(s) where their packed apples for Taiwan will be stored at all times prior to export • MAFBNZ registered exporters they are supplying packed apples to 	
2.	Document their post inspection security measures to ensure packed apples are transported in such a fashion to prevent pest contamination during transport from packhouse to coolstores, airports, wharf side or into sea containers (e.g. enclosed within curtain sided trucks or closed sea containers, etc.)	<ul style="list-style-type: none"> • Refer Section 3.8.3.2 of the MAFBNZ Standard Organisation Requirements
4.	<p>Ensure each package (carton) is clearly marked with the:</p> <ul style="list-style-type: none"> • Inspection date • The appropriate unique RPIN & production site code. • The unique MAF-BNZ registered 	<ul style="list-style-type: none"> • Taiwan accepts the inspection date being indicated as the "pack date" code. • It is HIGHLY RECOMMENDED that the

	packhouse code.	packer ID on the carton end label is made VERY obvious
5.	Ensure the pallet card details enable traceability of packed apples back to compliant production sites and include the following statement: "To Taiwan"	
6.	Ensure apples packed for export to Taiwan are segregated at all times from apples destined for other markets by: (i) a minimum of 100mm in coolstore (ii) a minimum of 1200mm when under ambient temperatures	

4 PROGRAMME CONTINGENCY MEASURES - CODLING MOTH INTERCEPTION

Requirement Number	Requirement	Notes:
1.	<p>A New Zealand detection of live codling moth during harvest and post-harvest phytosanitary inspections in apples from a Taiwan production site.</p> <ol style="list-style-type: none"> 1. The phytosanitary inspector/approved organisation must notify the appropriate IVA as per section 3.4.8 of this module 2. IVA in cooperation with the packhouse organisation (where appropriate) must remove the affected production site from the programme for the remainder of the season 3. IVA must update the register of compliant production sites. 4. IVA must circulate the information to exporter(s) on the removal of the production site from the programme within the same date of the site removal from the programme. 5. The packhouse organisation must establish the location and volumes of apples in the export pathway from the affected production site(s). 6. The appropriate IVA and MAF approved packhouse organisation must jointly conduct a traceback investigation to determine a cause of failure and report investigation findings to the programme management team 7. The programme management team is to determine if any further contingency measures are warranted. 	<ul style="list-style-type: none"> • As appropriate, subject to the investigation findings, MAF may withdraw certification for apples from the affected grower's production site(s). • Apples that have been previously inspected and passed inspection for Taiwan may retain certification if loaded into a container, the seal applied and the container admitted to the Port • The policy on retention or revocation of phytosanitary certificates is subject to MAFBNZ review at any time.
2.	<p><u>A Taiwan detection and notification of live codling moth in apples from New Zealand:</u></p> <ol style="list-style-type: none"> 1. MAF will notify the appropriate packhouse organisation, grower, IVA and the programme management team 2. MAF is to immediately remove the affected production site from the register of compliant production sites for the remainder of the season 3. MAF is to immediately remove the affected packhouse from the register of packhouses eligible to export for the 	<ul style="list-style-type: none"> • As appropriate, subject to the investigation findings, MAF may withdraw certification for apples from the affected grower's production site(s). • Packed apples originating from non-affected sites that have been inspected and passed inspection by the affected packhouse may retain certification if loaded into a container, the seal

	<p>remainder of the season and suspend the affected packhouse organisation pending the outcomes of a traceback investigation</p> <ol style="list-style-type: none"> 4. IVA must circulate the information to exporter(s) on the removal of the packhouse and the production site from the programme within the same date of the site and the packhouse suspension/removal from the programme. 5. Conduct the traceback investigation of the packhouse pathway to determine a cause of failure (jointly by the appropriate IVA and MAF) 6. The suspended packhouse organisation must: <ol style="list-style-type: none"> i. Cease packing apples for export to Taiwan in all their respective packhouses. ii. Withdraw certification for apples from the affected growers production site(s) and the affected packhouse. iii. Co-operate fully with the MAF co-ordinated investigation of the affected product pathway by providing full access to documentation and key staff iv. Immediately implement all recommended amendments to the approved operating system. v. Allow MAF to verify the implementation and effectiveness of the identified amendments if any 7. MAF, in conjunction with the programme management team, will determine the extent of any further contingency measures that may need to be implemented. 	<p>applied and the container admitted to the Port.</p> <ul style="list-style-type: none"> • Packed apples originating from non-affected sites that have been inspected and passed inspection by the non-affected packhouse of the suspended packing organisation may retain certification if loaded into a container, the seal applied and the container admitted to the Port prior to or on the day of the site suspension while pending the results of the investigation. These apples may continue to be certified once/if the appropriate authorities have approved all recommended amendments to the MAF approved organisation's system. • Suspended packing organisation may only resume packing of apples for export to Taiwan: <ol style="list-style-type: none"> i) Only in packhouses not directly implicated with the Taiwan detection if the packhouses facility individually registered into the programme prior to detection; and ii) After the appropriate authorities have approved all recommended amendments to the MAF approved organisation's system. • The policy on retention or revocation of phytosanitary certificates is subject to MAFBNZ review at any time.
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APPENDIX 1: REFERENCES

- Taiwan Quarantine Requirements for the “Importation of apples from countries or districts where Codling Moth is known to occur”
- MAF BNZ Export Certification Standard: IVA Requirements
- MAF BNZ Export Certification Standard: Organisation Requirements
- MAF BNZ Export Certification Standard: Technical Requirements: Pest Survey
- MAF BNZ Export Certification Standard: Phytosanitary Inspection
- ICPR for Taiwan <http://www.biosecurity.govt.nz/regs/exports/plants/icpr>
- NZ Pipfruit IFP/0809/A, NZ Pipfruit IFP/0108/A2/2, NZ Pipfruit, IFP/0809A1.11-14, NZ Pipfruit IFP/0809/A1.19- 34, NZ Pipfruit IFP/0809/A1.49-50

APPENDIX 2: DEFINITIONS & ACRONYMS

Approved Organisation	An Organisation that has been formally recognised by MAF Biosecurity New Zealand as competent to receive delegated authority to act on its behalf to provide specific phytosanitary activities in accordance with the requirements specified in the relevant MAF Biosecurity New Zealand standard(s).
BAPHIQ	Taiwan Bureau of Animal and Plant Health Inspection and Quarantine
Base	The replaceable sticky base in the floor of delta monitoring TRAPS on which the CAP is placed and moths caught
Block (or Management Area)	A clearly identified planting of trees managed as an entity and may involve one or more varieties but may be discontinuous within a production site (referred to by the industry as a management area and identified as such on their spray diaries and apple packhouse submission records)
BIOFIX	The time to first flight of moths originating from the overwintering pupal population of codling moth
Cap	Pheromone lure (either loaded with codlemone at 1mg or 10mg)
CM	Codling moth, scientific name <i>Cydia pomonella</i> (Linnaeus)
CMGV	Codling Moth Granulosis Virus, a species specific entomovirus
GDD	Growing Degree Days
Grower	Producer of apples under the Apples to Taiwan programme
Grower Line	Predefined quantity of apples from a single Taiwan registered production site, from which samples are drawn by a phytosanitary inspector and inspected to determine eligibility for export.
High codling moth pressure site	A production site where the CM traps exceeded the thresholds set out in Section 2.7.1 of this document on four occasions (i.e. where 5 or more chemical interventions for codling moth were made during the season).
High risk production sites	<p>(1) Production sites where codling moth was detected at harvest or post harvest in the previous season</p> <p>(2) Production sites that were removed from the Apples to Taiwan programme in the previous season due to non-compliance with the programme</p> <p>(3) Growers new to the Apples to Taiwan programme AND who do not have a documented history from the previous season of CM management</p>
ICPR	Importing Country Phytosanitary Requirements
IFOAM	International Federation of Organic Agriculture Movements

IFP	Integrated Fruit Production
IPPC	International Plant Protection Convention
NPPO	National Plant Protection Organisation as defined in the IPPC
IVA	An organisation accredited as meeting ISO/IEC 17020:2000 and its independence criteria type A, and Biosecurity New Zealand supplementary technical requirements, and authorised by Biosecurity New Zealand to carry out services associated with export certification.
Low risk production sites	Production sites where codling moth was not detected at harvest or post harvest in the previous season.
Lure	Pheromone lure - see CAP
MAFBNZ	Ministry for Agriculture and Forestry Biosecurity New Zealand (New Zealand NPPO)
Mating Disruption	A pheromone based crop protection method that relies on high concentration of sex pheromone to disrupt male moths detecting female moths
Organic Production	Production based on internationally certified (IFOAM) practices
PNZI	Pipfruit New Zealand Incorporated – the NZ pomefruit industry body
Production Site	A grower designated and NZ MAF registered property or part of a property with clearly defined and mapped boundaries on which apples are grown for export to Taiwan under this programme. This may be a group of blocks, a single block, or a portion of a block within a property.
Property	A single contiguous area of land, as identified by property valuation numbers(s), on which the apples are grown.
Phytosanitary Inspector	For the purposes of this compliance programme these are the staff members listed in an approved organisation's register of competent phytosanitary staff.
RPIN	Registered Property Identification Number – the unique number assigned to all export orchards linked to the property valuation roll number (R denotes a pomefruit crop)
Taiwan Registered Variety	Apple varieties within a Taiwan registered production site that are grown and managed for the purpose of export to Taiwan. These will be varieties that the grower has identified on their registration form at registration (for example but not limited to: the Pacific series, Royal Gala, Fuji). If a Taiwan registered production site contains more than one variety block of a variety intended for Taiwan registration then all variety blocks of that variety within the production site must be registered and

treated as per the programme requirements for the entire season.

This enables early season CM management across all varieties and specific management in varieties for Taiwan market while protecting market requirements for non-Taiwan varieties also.

TCE

Tray carton equivalent

Traps

Delta monitoring traps held in trees that when loaded with a sticky BASE and codlemone pheromone CAP are actively trapping codling moth.

Trapping Records

Weekly records of codling moth pheromone trap catches.

APPENDIX 3: Guideline on How to Define Production Sites

Taiwan production sites are, or may be, an amalgamation of blocks within your orchard. Blocks (sometimes referred to as management areas) are the divisions you recognise for spray diary purposes.

Growers need to think very carefully how/if they subdivide their orchard for Taiwan when defining Taiwan production sites. It may be advisable to consult with your CM trap monitoring personnel and MAF approved organisation that monitors your compliance to this programme's requirements as a means of defining your final Taiwan production site(s). In addition, your orchard map and details of the last season's CM trap catches may assist in the decision-making process.

Productions sites must be a minimum of 1 ha and monitored by pheromone trap at a trap density of 1 trap per ha. Where a part number is included in the area then the number is rounded according to 'Swedish rounding' i.e., 0.0-0.49 ha sites to be rounded DOWN (ie 2.35Ha =2 ha for trapping purposes) and 0.5-0.99 is rounded UP such that an additional trap is required (ie 5.72Ha = 6 Ha for trapping purposes).

Growers have the option of registering their orchard as one single Taiwan production site or more than one (multiple) Taiwan production sites within their property.

- A single Taiwan production site within an RPIN is identified with a **T** after the RPIN. For example:

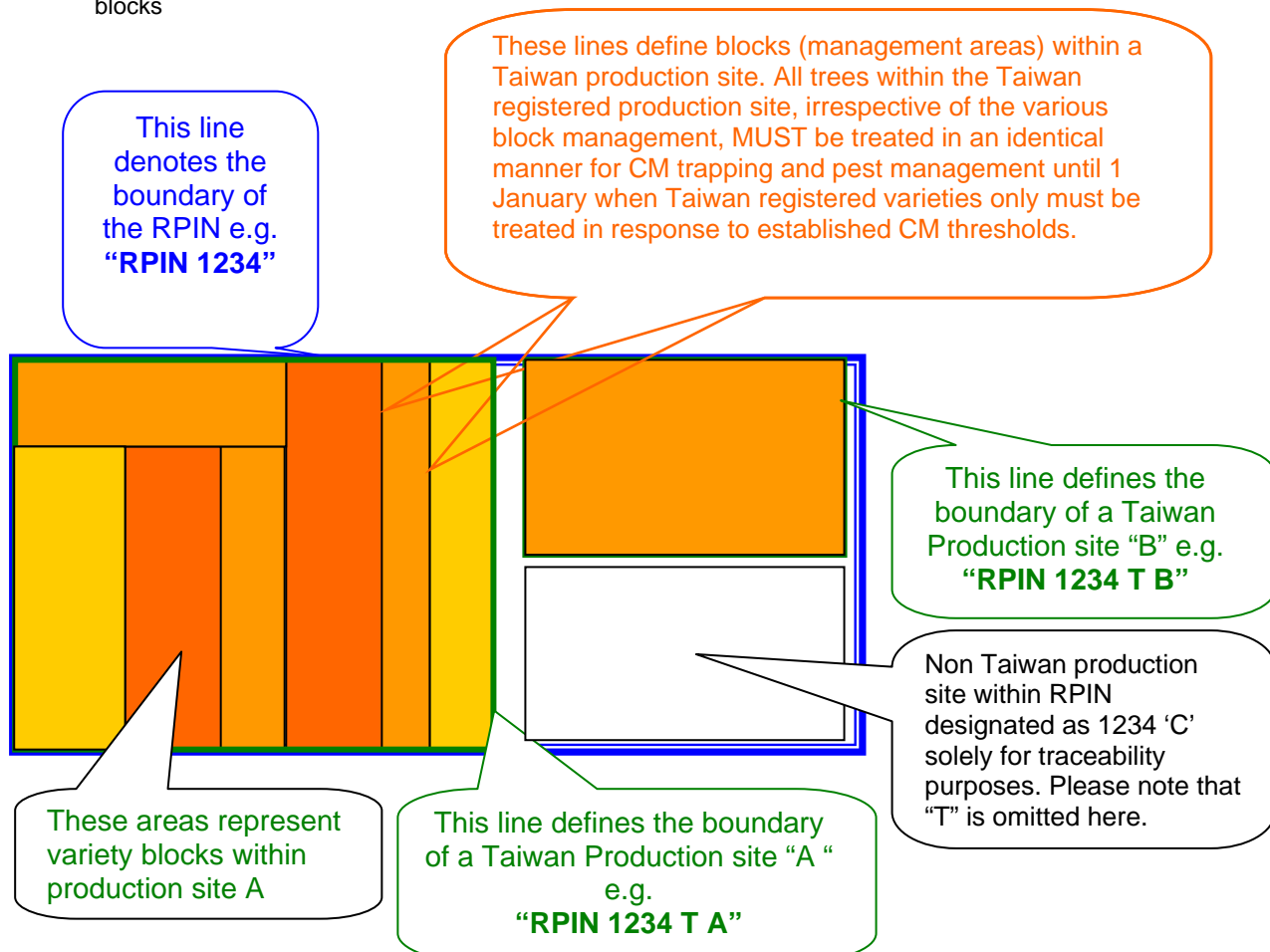
R 1234 **T A**

- For each RPIN there may be more than one production sites each consisting of one or more management areas (blocks) - please refer Figure 2. If there are multiple Taiwan production sites within an RPIN, these are identified on the register by an **alpha** after the RPIN **T**. For example:

R 1234 **T A**; R 1234 **T B**; etc.

If a Taiwan registered production site contains more than one variety block of a variety intended for Taiwan registration then all variety blocks of that variety within the production site must be registered and treated as per the programme requirements for the entire season.

Figure 2: An example of Taiwan production sites registered within a property with a number of variety blocks



APPENDIX 4: Guideline for Codling Moth Pest Management

G2.1 Non-mating Disruption Programme

MANDATORY APPLICATION (all growers)

- Apply at least one pesticide spray for codling moth in spring/early summer in accordance with the codling moth BIOFIX model timing for your location:

Match®, Comic®, Mimic®, Altacor® or Prodigy®- to be applied just prior to first codling moth egg hatch i.e. between 80 and 110 degree days after your regional BIOFIX date. Applications in the green and yellow bands on the GDD model table on the PNZI website are acceptable;

Highly recommended (but not auditable) SECOND generation CM APPLICATION (all North Island growers only)

- North Island growers are highly recommended to make a second application at BIOFIX + 700-780 GDD to address the start of egg laying for the second generation. Suitable products for application at this time are either a single application of, Comic®/Mimic® or Prodigy® **[Fuji strains, sciros, scired, sciearly (ie Taiwan varieties)]** two applications of CMGV no more than 10 days apart **[all varieties likely to have some UK/EU destined volume]**
 - If trap monitoring thresholds have been exceeded and a treatment applied **within the 7 days prior** to the 700GDD being achieved consider **the application to have been applied**
 - If the treatments were applied in response to a threshold **greater than 7 days prior** to the 700GDD being achieved **the reapplication should be considered especially where high CM pressure exists**
 - The rationale between the two applications is that cover will still be strong within the first 7 days but beginning to degrade over the latter 7 days hence the suggestion for additional cover
- **BIOFIX** dates (determined from long-term historical data) at a base of 10°C are:

- North Island	7 October
- South Island (Nelson/Marlborough)	21 October
- South Island (Otago/Canterbury)	1 November
 - To track and monitor the accumulation of growing degree days refer to the link on the home page of the Pipfruit NZ Inc website: www.pipfruitnz.co.nz . This website is the only permissible means of identifying and tracking GDD's.
 - After the initial insecticide application, codling moth control in all districts must be based on pheromone trap catches. Applications of insecticide in response to trap thresholds and additional to those for mandatory requirements should be made to protect Taiwan varieties within production sites without needing to treat the whole production site.
 - Additional applications of Prodigy®, Avaunt®, Comic®, Mimic®, Delegate® or CMGV are required when the prescribed thresholds are exceeded. There are however, considerations to make when selecting chemicals to use (See Important Notes).

IMPORTANT NOTES

1. Only one application of Prodigy® can be applied but not later than 1 December **unless applied to Taiwan registered varieties then a 28 day PHI can be observed**
2. Only one application of Comic® or Mimic® can be applied but not later than 1 December **unless applied to Taiwan registered varieties then a 28 day PHI can be observed**
3. Only one application of Avaunt® may be used and no later than 12 December **unless applied to Taiwan registered varieties then a 28 day PHI can be observed**
4. Only one application of Delegate® can be used – close to harvest **of late varieties only**, observing a 14 day PHI and not in blocks prone to WAA infestation. *There is strong evidence of severe interference of *Aphelinus mali* populations with this product and WAA blow outs can be expected following its use. WAA is also actionable for Taiwan supply- DO NOT use on early varieties.*
5. Applications of all sprays for codling moth control should be applied to the whole production site up to 31 December, as of 1 January treat only Taiwan destined varieties, Applications of all sprays for codling moth control should be made as soon as possible after trap thresholds are exceeded and must always be applied within 6 days of trap thresholds being exceeded. This delay in applying pest management measures when thresholds are exceeded is compromise implemented so as to account for adverse weather conditions, etc., and is generally not desirable or recommended.
6. The between-spray interval when thresholds are exceeded is 14 days for Prodigy™, Avaunt®, Comic®, Mimic®, Delegate® and Calypso®
7. When a trap threshold has been exceeded following an application for an earlier threshold being exceeded, and the interval between applications is still within the product label recommendations, do not apply another treatment until the between-spray interval has elapsed (usually 14 days).
8. If high codling moth pressure occurs within or close to the production site, the spray thresholds are likely to be exceeded regularly requiring frequent spraying. Such production sites are advised to implement CM mating disruption or removal and destruction of the outside sources of codling moth is preferred if possible.
9. In high pressure scenarios *Maximum Residue Limits* (MRL's) for Taiwan and possibly alternative markets may be exceeded if codling moth management intervention is required late into the season. It is important that growers recognise the maximum number of sprays that can be applied from each chemical group and ensure that appropriate withholding periods are met. Again CM mating disruption is the preferred option.
10. If inclement weather prevents application by a required day then all records justifying the delayed application (e.g. local weather station data showing rain periods, wind speed/direction, etc.) must be kept. If there is a sensitive area close by - refer to the spray plan for your property that highlights sensitive areas.
11. If trap thresholds are exceeded within 28 days of harvest then codling moth management can be achieved by an application of Delegate® in late harvested varieties only and not those susceptible to woolly apple aphid. If trap thresholds are exceeded closer to harvest then Madex3®, Carpovirusine®, Virex® or Cyd-X® (Codling Moth granulosis virus) can be applied within the 14 day period immediately prior to harvest. See notes on the Codling Moth granulosis virus use below.

G2.2 Mating Disruption Programme (IFP and Organic Production)

Mating disruption is the preferred method of CM management for this programme and especially for production sites that have multiple varieties that cannot easily be separated for treatment purposes.

Mating disruption will provide a high level of codling moth control and suppress adult moth activity in and around treated blocks. However, codling moth infestation and damage may occur depending on nearby sources of codling moth. The performance of mating disruption as a control measure is also dependent on the size and shape of the treated area.

Mating disruption is best if applied district wide and growers are encouraged to discuss this with their neighbouring apple growers.

A suggestion for orchardists with walnut groves close by is to work with the land owners and supply CM mating disruption dispensers to those people to assist your programme.

G2.3 Codling Moth Pest Management by using Mating Disruption

Placement of dispensers:

- Dispensers must be present in the Taiwan designated production site by the BIOFIX date for your region (refer G2.1).
- Mating disruption pheromone dispensers should be placed in the orchard at a density of 1000 dispensers per ha (Isomate® C+, NoMate®), or 500 per ha (Isomate® CTT, CheckMate CMXL).

Note: Retain purchase records for audit purposes.

Note: These are the only dispensers approved at this time for the Apples to Taiwan programme. There are new technologies being developed but because we require dispensers to achieve codlemone release profiles similar to Isomate® dispensers over the 5-6 months they are required, the risk of poor CM mating disruption by introducing alternative unproven dispenser technologies is too high and trial work is ongoing

- Dispensers must be placed singly onto tree branches in the top 10% of the canopy
- IFP production sites must apply insecticide as per G2.1. The organic production sites must apply CMGV as per G2.4.

G2.4 CMGV use

IFP growers should use IFP approved chemicals including CMGV. For organic growers, in all districts one application of CMGV must be applied at the BIOFIX + 80-110 GDD dates for your region. A second application of CMGV is required within 10 days.

CMGV works best if it is built up in the orchard over a series of applications but will work to manage CM in more casual use scenarios.

The thresholds for high dose codling moth traps operated in the presence of mating disruption are as for non-mating disruption production sites. Once thresholds are exceeded growers must augment mating disruption with CMGV (Organic Production) or applications of IFP approved products.

Applications of all sprays for codling moth control should be applied as soon as possible after trap thresholds are exceeded and must always be applied within 6 days of trap thresholds being exceeded

North Island based organic growers may make a second CM generation application of CMGV at the BIOFIX + 700-780 GDD. This should consist of two applications no more than 10 days apart.

IMPORTANT NOTES

1. Codling Moth Granulosis Virus (CMGV, Madex3®, Carpovirusine®, Virex®, Cyd-X®) is susceptible to inappropriate storage and is UV sensitive. Growers will need to document and demonstrate appropriate product custody including:
 - Current product shelf life expiry date is within specification;
 - Age of product in stock (must be within manufacturers stated shelf life) (**Note:** purchase records);
 - Refrigeration of product until use.
2. CMGV (Madex3® Carpovirusine®, Virex®, Cyd-X®) is highly susceptible to UV degradation. The re-treatment interval is 10 days under field conditions. A UV-protectant such as milk powder (organic production) or a commercial UV protectant (IFP production) can increase the persistence of the product while a feeding stimulant (e.g. sugar) can improve the efficacy. Not all formulations recommend their use
3. Use of UV-protectants and feeding stimulants should be considered with any CMGV product to decrease the risk of larval entry into apples
4. Addition of protectants and stimulants does not extend the 10-days period
5. Organic growers should check with their certifier for permissible formulations of CMGV and permissible UV protectants and feeding stimulants.

APPENDIX 5: Application for Registration: Packhouse(s)

Apples to Taiwan 2009/10

Application for Registration: Packhouse(s)

Packhouse Information Requirements:

Please use BLOCK LETTERS to provide the following information, which is required, if you intend to participate as a packhouse in the **Apples to Taiwan Programme**

Forward your application for registration to your Independent Verification Agency (AQ or SGS), Refer Section 1 for contact details

The packhouse should confirm with their IVA the costs associated to become registered for the Apples to Taiwan Programme

I [*state authorised packhouse officer name*]
hereby apply for an "Apples to Taiwan" Registered Mark

Packhouse Company or Partnership Name:

MAF Biosecurity New Zealand Approved Organisation Contract of Approval number:.....

Packhouse Postal Address:

.....
.....

Telephone Number:..... Fax Number:

Postal Code:..... Email Address:

Physical location of Packhouse(s):.....

.....

MAFBNZ Alpha code or alternative number used last season i.e. CX"

Do you intend to pack IFP apples only
 Organic apples only
 IFP and Organic apples

Do you apply bar coding on packages as a means of product identification?

YES NO

Is your coolstore facility on the same site? YES NO

If no, state name & location(s) of the coolstore facility(s) your packed apples will be stored at below:

.....

Note: Where the packhouse and the coolstore are on the same site and owned and operated as one business entity, only one registration will be required.

Exporter Details:

State the Company name, address & contact person of the exporter(s) who will be exporting your packed apples to Taiwan (Note: If this information is not immediately known, it may be supplied to your IVA on or by 26 January):

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Grower Production Site Details (attach your known register of grower production sites for Taiwan to this application):.....

.....

- (a) I/We agree to notify MAF Biosecurity New Zealand via our Independent Verification Agency of any changes to the above details, including any changes to our register of grower production sites.
- (b) I/We understand that this registration does not entitle us to automatically undertake export inspection activities on behalf of MAF Biosecurity New Zealand without first becoming formally approved in accordance with the MAF Biosecurity New Zealand's Export Certification Standard "Organisation Requirements".

Signature

(Applicant): **Date:**.....

Official Use Only

Receipt No:..... Mark number allocated:

Applicant notified: *Letter/Fax/Email*..... Previous details amended:

Database updated:/...../.....