Final Report

Generation of Residue Data for Pesticide Minor Use Permit Applications in Horticulture Crops 2015/2016

Project leader:

Sara Pengelly

Delivery partner:

Eurofins Agroscience Services Pty Ltd

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Project:

Generation of Residue Date for Pesticide Minor Use Permit Applications in Horticulture Crops 2015/2016 – ST15027

Disclaimer:

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Level 8
1 Chifley Square
Sydney NSW 2000

Telephone: (02) 8295 2300

www.horticulture.com.au

Content

Summary

This project was conducted to generate residue data to support existing minor-use permits and their renewal as requested by the APVMA. Data generated from the nineteen studies was also used to support existing temporary MRLs that were previously established by the APVMA and, where possible, to support the establishment of permanent MRLs.

The project was established on behalf of Horticulture Innovation Australia along with Australian Banana Growers' Council Inc, Australian Olive Association Ltd, Papaya Australia Ltd, Raspberries and Blackberries Australia Inc, Summerfruit Australia Ltd, Citrus Australia Ltd and Australian Blueberry Growers' Association Inc.

This project consisted of nineteen studies in a wide range of horticultural crops including bananas, olives, papaya, rubus species, stone fruit, snow peas, sugar snap peas, green beans, carrots, capsicums, cucumbers, processing tomatoes, blueberries, mandarins and tangelos. The studies were conducted in the major production areas of Australia for the target crops. All studies were conducted according to the OECD principles of Good Laboratory Practice.

The data generated from the studies has resulted in nineteen permit applications being submitted to the APVMA for permit renewals with seventeen permits extended by the APVMA and two applications pending.

Keywords

Abamectin, Alpha-cypermethrin, Azoxystrobin, Banana, Beta-cyfluthrin, Bifenthrin, Blueberry, Capsicum, Carrot, Citrus, Clothianidin, Cucumber, Cyprodinil, Ethephon, Etoxazole, Fludioxonil, Fosetyl, Fungicide, Green bean, Growth regulator, Hexythiazox, Imidacloprid, Insecticide, Iprodione, Maldison, Mancozeb, Metalaxyl, Metiram, Minor-use, Nectarine, Olive, Papaya, Pea - snow and sugar snap, Peach, Phosphorous acid, Plum, Pyraclostrobin, Pyriproxyfen, Rubus, Stone fruit, Summer fruit, Tomato, Vegetables

Introduction

The aim of this project was to generate pesticide residue data to support existing minor-use permits and their renewal as requested by the Australian Pesticides and Veterinary Medicines Board (APVMA). Data was also required to support existing temporary MRLs that were previously established by the APVMA and, where possible, to support the establishment of permanent MRLs. The safety of the crops to the pesticides applied, also needed to be confirmed. The studies conducted were as prioritised by Industry through the SARP review process.

Nineteen (19) crop residue studies were conducted on seven (7) fungicides, nine (9) insecticides and a single plant growth regulator. These studies were conducted at 59 different field sites in both outdoor and protected cropping environments in Queensland, New South Wales, Victoria, South Australia and Western Australia.

This report contains a summary of the experimental methods and results of each of the trials conducted under the ST15027 project. Final residue reports have been submitted to Horticulture Innovation Australia Limited for submission to the APVMA together with the relevant renewal applications for minor-use permits.

Methodology

As part of project ST15027, 59 trials in a total of 19 residue studies were completed.

The residue trials undertaken were as follows:

Eurofins Study Number	Permit Number	Description	Number of Trials
HIA/GLP/15/17	PER14966	Ethephon / Bananas / Crop Timing Management	8
HIA/GLP/15/18	PER14897	Clothianidin / Olives / Olive Lace Bug	2
HIA/GLP/15/19	PER14908	Metiram + Pyraclostrobin / Olives / Anthracnose	2
HIA/GLP/15/20	PER13671	Beta-Cyfluthrin / Papaya / Fruit-Spotting Bug and Banana-Spotting Bug	2
HIA/GLP/15/06	PER14509	Azoxystrobin / Rubus spp. / Anthracnose, Botrytis and Cladosporium	4
HIA/GLP/15/07	PER14448	Bifenthrin / Rubus spp. / Elephant Weevil, Monolepta Beetles and Plague Thrips	4
HIA/GLP/15/08	PER14238	Metalaxyl + Mancozeb / Rubus and Rubus Hybrids/ Downy Mildew	4
HIA/GLP/15/09	PER14875	Alpha-Cypermethrin / Stone Fruit / Fruit Fly	3
HIA/GLP/15/10	PER14124	Fosetyl Present as the Aluminium Salt / Apricot, Peach, Nectarine and Plum / Phytophthora Trunk and Collar Rot	4
HIA/GLP/15/12	PER13899 V2	Etoxazole / Snow or Sugar Snap Peas / Two Spotted Mite	2
HIA/GLP/15/13	PER14765	Hexythiazox / Snow and Sugar Snap Peas / Tomato Spider Mite, Two Spotted Mite, Broad Mite and Tomato Russet Mite	2
HIA/GLP/15/14	PER12567	Iprodione / Green Beans and Carrots / Sclerotinia, Black Rot and Grey Mould	4
HIA/GLP/15/15	PER13031	Maldison / Capsicums and Cucumbers / Fruit Fly	4
HIA/GLP/15/16	PER14701	Pyriproxyfen / Beans / Silverleaf Whitefly	2
HIA/GLP/15/01	PER11483	Phosphorous Acid / Processing Tomatoes / Phytophthora Root Rot	4
HIA/GLP/15/05	PER14772	Iprodione / Mandarins and Tangelos / Emperor Brown Spot	3
HIA/GLP/15/04	PER12534	Imidacloprid / Blueberry / Scarab Beetle Larvae	2
HIA/GLP/15/02	PER13630	Cyprodinil + Fludioxonil / Blueberry / Grey Mould and Anthracnose	2
HIA/GLP/15/03	PER14423	Abamectin / Blueberry / Fruit Fly	1

The test items used were:

Product Name	Active Constituent and Concentration	Formulation	Registrant
PROMOTE PLUS 900 GROWTH REGULATOR	900 g/L ethephon	SC	ADAMA Australia Pty Ltd
SUMITOMO SAMURAI SYSTEMIC INSECTICIDE	500 g/kg clothianidin	WG	Sumitomo Chemical Australia Pty Ltd
AERO FUNGICIDE	550 g/kg metiram and 50 g/kg pyraclostrobin	WG	BASF Australia Ltd
BULLDOCK 25 EC INSECTICIDE	25 g/L beta-cyfluthrin	EC	Bayer CropScience Pty Ltd
AMISTAR 250 SC FUNGICIDE	250 g/L azoxystrobin	SC	Syngenta Australia Limited
VENOM 240 SC INSECTICIDE	240 g/L bifenthrin	SC	ADAMA Australia
RIDOMIL GOLD MZ WG SYSTEMIC & PROTECTIVE FUNGICIDE	640 g/kg mancozeb and 40 g/kg metalaxyl-m	WG	Syngenta Australia Pty Ltd
DOMINEX DUO INSECTICIDE	100 g/L alpha-cypermethrin	EC	FMC Australasia Pty Ltd
ALIETTE WG SYSTEMIC FUNGICIDE	800 g/kg fosetyl-aluminum	WG	Bayer CropScience Pty Ltd
PARAMITE SELECTIVE MITICIDE	110 g/L etoxazole	SC	Sumitomo Chemical Australia Pty Ltd
CROP CARE CALIBRE 100EC MITICIDE	100 g/L hexythiazox	EC	Crop Care Australasia Pty Ltd
ROVRAL AQUAFLO FUNGICIDE	500 g/L iprodione	SC	FMC Australasia Pty Ltd
FYFANON 440EW INSECTICIDE	440 g/L maldison	EW	Cheminova Australia Pty Ltd
ADMIRAL ADVANCE INSECT GROWTH REGULATOR	100 g/L pyriproxyfen	EW	Sumitomo Chemical Australia Pty Ltd
AGRI-FOS 600 SYSTEMIC FUNGICIDE	600 g/L phosphorous acid	L	Agrichem
CONFIDOR GUARD SOIL INSECTICIDE	350 g/L imidacloprid	SC	Bayer CropScience Pty Ltd
SWITCH FUNGICIDE	375 g/kg cyprodinil and 250 g/kg fludioxonil	WDG	Syngenta Australia Pty Ltd
VERTIMEC MITICIDE/INSECTICIDE	18 g/L abamectin	EC	Syngenta Australia Pty Ltd

Each study was conducted under a separate Study Plan. Draft Study Plans were prepared for each study and distributed to the Hort Innovation Project Reference group prior to being evaluated by the Eurofins Agroscience Quality Assurance Unit for comment. Study Plans were signed by the Study Director and Hort Innovation representative then distributed to field and analytical phase personnel for each study.

Test item samples with Certificates of Authenticity (CoA) were obtained from the various manufacturers and/or registrants and distributed to each test site location. The field phase of each study was completed by qualified Eurofins Agroscience Services personnel following the company's 'Standard Operating Procedures' which comply with the OECD Principles of Good Laboratory Practice.

Field sites were selected in commercially grown crops in regions where those crops are commonly produced. Each study was conducted using a single plot non-randomised design.

The treatments were applied in a manner that simulated best commercial practice for each application methodology of a product in a particular crop as detailed in each Study Plan.

Samples were collected at the timings outlined in the relevant Study Plan and frozen within 3 hours of collection. Frozen samples were dispatched, with accompanying 'Chain of Custody' (COC) documentation, to the analytical laboratory, Eurofins Agroscience Testing, upon completion of the field phase. Receipt was acknowledged by return of the COC.

Details of test sites and analytical procedures for each study are presented below:

HIA/GLP/15/17 - DETERMINATION OF THE RESIDUES OF ETHEPHON IN BANANAS

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied	Amount of Prepared Solution per Pseudostem	Application Time	Sampling Times
150703, Deeral, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (285 DAT)
150704, Palmerston, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (272 DAT)
150705, Mirriwinni, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (272 DAT)
150706, Garradunga, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (271 DAT)
150707, Japoonvale, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (295 DAT)
150708, Kennedy, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (196 DAT)
150709, Windemere, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (245 DAT)
150710, Givelda, Qld	1. Untreated	-	-	-	Harvest
	2. PROMOTE PLUS	4.8 mL/L	4 mL	At nurse sucker management	Harvest (239 DAT)

DAT = days after treatment

The treatments were applied in a manner that simulated best commercial practice for the application of a growth regulator in bananas.

Applications were made as an injection into the pseudostem. A screwdriver was used to provide a small opening into the pseudostem approximately 0.75 m from the ground and at a 45-degree angle. 4 mL of prepared solution was then slowly injected into the opening by inserting the syringe 6-10 cm into the pseudostem.

Once injection was complete, all main leaves were removed with the main 'cigar' leaf remaining and hence the growing point remained intact.

For each sample, 12-24 fruit, were collected from 3-4 bunches of each plot. From each bunch, a minimum of 2 fruit were taken from the top, middle and lowest harvestable hand of each bunch. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Ethephon residues were determined according to:

"Quick Method for the Analysis of Numerous Highly Polar Pesticides in Foods of Plant Origin via LC- MS/MS Involving Simultaneous Extraction with Methanol (QuPPe-Method)", Version 8.1, Method 1.3, March 2015, EURL-SRM

HIA/GLP/15/18 - DETERMINATION OF THE RESIDUES OF CLOTHIANIDIN IN OLIVES

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied g/100 L	Application Time DBCH	Sampling Times DALA
Trial 150712 Virginia, SA	1. Untreated	-	-	56
	2. SAMURAI + MAXX	40 + 0.05% v/v	56	56
Trial 150713 Kialla East, Vic	1. Untreated	-	-	57
	2. SAMURAI + MAXX	40 + 0.05% v/v	57	57

DBCH = days before commercial harvest, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in olives. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, >2 kg fruit were collected from 12 areas of each plot. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Oil processing was conducted via cold pressing.

Clothianidin residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/19 - DETERMINATION OF THE RESIDUES OF METIRAM AND PYRACLOSTROBIN IN OLIVES

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied g/100 L	Application Times DBCH	Sampling Times DALA
Trial 150715 Virginia, SA	1. Untreated	-	-	21
	2. AERO	200	42 and 21	21
	3. AERO	400	42 and 21	21
Trial 150716 Kialla East, Vic	1. Untreated	-	-	21
	2. AERO	200	42 and 21	21
	3. AERO	400	42 and 21	21

DBCH = days before commercial harvest, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of fungicides in olives. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, >1 kg fruit was collected for each whole fruit sample and >2 kg fruit was collected for each sample to process into oil, with all samples being collected from 12 areas of each plot. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Pyraclostrobin residues were determined according to: *"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.*

Metiram (total dithiocarbamates) residues were determined according to:

"Determination of Dithiocarbamate Fungicide Residues by Carbon Disulphide Generation & GLC/FPD or GC/MS in Fresh Fruit and Vegetables", AATM-S-56, Rev.5, August 2007, Agrisearch Analytical Pty Ltd.

HIA/GLP/15/20 - DETERMINATION OF THE RESIDUES OF BETA-CYFLUTHRIN IN PAPAYA

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied	Application Times DBFS	Sampling Times DALA
Trial 150718, Mareeba, Queensland	1. Untreated	-	-	3
	2. BULLDOCK	50 mL/100 L	21, 0	0, 1 and 3
Trial 150719, Deeral, Queensland	1. Untreated	-	-	3
	2. BULLDOCK	50 mL/100 L	21, 0	0, 1 and 3

DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in papaya. Treatments were applied by mister in sufficient water to ensure even and thorough coverage of all parts of each plant.

At least 12 fruit were sampled from 12 areas of each plot for each sample. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample. The processing of whole fruit to peel and flesh was conducted prior to samples being placed in frozen storage by the field phase personnel.

Beta-cyfluthrin residues were determined according to:

""Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/06 - DETERMINATION OF THE RESIDUES OF AZOXYSTROBIN IN RUBUS SPECIES

The treatments and sampling times are presented in the table below:

Trial, Species and Location	Treatment	Rate Applied	Application Times DBFS	Sampling Times DALA
Trial 150721, Silvanberry (PC) Stirling, South Australia	1. Untreated	-	-	Harvest (1 DALA)
	2. AMISTAR	80 mL/100 L	28, 14 and 0	0, 1 and 3
Trial 150722, Raspberry (PC) Warnervale, New South Wales	1. Untreated	-	-	Harvest (1 DALA)
	2. AMISTAR	80 mL/100 L	28, 14 and 0	0, 1 and 3
Trial 150723, Blackberry (Open field) Myrtleford, Victoria	1. Untreated	-	-	Harvest (1 DALA)
	2. AMISTAR	80 mL/100 L	28, 13 and 0	0, 1 and 4
Trial 150724, Raspberry (Open field) Stanthorpe, Queensland	1. Untreated	-	-	Harvest (1 DALA)
	2. AMISTAR	80 mL/100 L	27, 13 and 0	0, 1 and 3

DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of fungicides in rubus species. Treatments were applied by hand gun or boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

At least 12 fruit were sampled from 12 areas of each plot for each sample. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Azoxystrobin residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/07 - DETERMINATION OF THE RESIDUES OF BIFENTHRIN IN RUBUS SPECIES

The treatments and sampling times are presented in the table below:

Trial, Species and Location	Treatment	Rate Applied	Application Times DBFS	Sampling Times DALA
Trial 150726, Silvanberry (PC) Stirling, South Australia	1. Untreated	-	-	Harvest (1 DALA)
	2. VENOM 240 SC + BS1000	250 mL/ha + 50 mL/100 L	21, 14, 7 and 0	0, 1 and 3
Trial 150727, Raspberry (PC) Warnervale, New South Wales	1. Untreated	-	-	Harvest (1 DALA)
	2. VENOM 240 SC	250 mL/ha	21, 14, 7 and 0	0, 1 and 3
Trial 150728, Blackberry (Open field) Myrtleford, Victoria	1. Untreated	-	-	Harvest (1 DALA)
	2. VENOM 240 SC + BS1000	250 mL/ha + 10 mL/100 L	20, 13, 7 and 0	0, 1 and 4
Trial 150729, Raspberry (Open field) Stanthorpe, Queensland	1. Untreated	-	-	Harvest (1 DALA)
	2. VENOM 240 SC + BS1000	250 mL/ha + 10 mL/100 L	22, 14, 8 and 0	0, 1 and 3

DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in rubus species. Treatments were applied by hand gun or boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

At least 12 fruit were sampled from 12 areas of each plot for each sample. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Bifenthrin residues were determined according to an analytical method developed by Eurofins Agroscience Testing Pty Ltd:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/08 - DETERMINATION OF THE RESIDUES OF METAXYL AND MANCOZEB IN RUBUS SPECIES

The treatments and sampling times are presented in the table below:

Trial, Species and Location	Treatment	Rate Applied	Application Times	Sampling Times DALA
Trial 150731, Silvanberry (Protected Cropping) Stirling, South Australia	1. Untreated	-	-	Harvest (14 DALA)
	2. RIDOMIL GOLD MZ	2.5 kg/ha	Bud burst, 14 DAT1, 10 DBFS and 0 DBFS	0, 3, 7 and 14
Trial 150732, Raspberry (Protected Cropping) Warnervale, New South Wales	1. Untreated	-	-	Harvest (14 DALA)
	2. RIDOMIL GOLD MZ	2.5 kg/ha	Bud burst, 14 DAT1, 10 DBFS and 0 DBFS	0, 3, 7 and 14
Trial 150733, Blackberry (Open field) Myrtleford, Victoria	1. Untreated	-	-	Harvest (14 DALA)
	2. RIDOMIL GOLD MZ	2.5 kg/ha	Bud burst, 15 DAT1, 9 DBFS and 0 DBFS	0, 4, 6 and 14
Trial 150734, Raspberry (Open field) Stanthorpe, Queensland	1. Untreated	-	-	Harvest (14 DALA)
	2. RIDOMIL GOLD MZ	2.5 kg/ha	Bud burst, 15 DAT1, 10 DBFS and 0 DBFS	0, 3, 7 and 14

DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of fungicides in rubus species. Treatments were applied by hand gun or boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

At least 12 fruit were sampled from 12 areas of each plot for each sample. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Metalaxyl and mancozeb residues were determined according to an analytical method developed by Eurofins Agroscience Testing Pty Ltd:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

ST15027 - HIA/GLP/15/09 - DETERMINATION OF THE RESIDUES OF ALPHA-CYPERMETHRIN IN SUMMERFRUIT

The treatments and sampling times are presented in the table below:

Trial, Crop and Location	Treatment	Rate Applied mL/100 L	Application Times DBFS	Sampling Times DALA
Trial 150736, Nectarine, Echunga, South Australia	1. Untreated	-	-	0 (Harvest)
	2. DOMINEX DUO	100	21, 14, 7 and 0	0, 7, 14 and 21
Trial 150737, Peach, Shepparton East, Victoria	1. Untreated	-	-	0 (Harvest)
	2. DOMINEX DUO	100	21, 14, 8 and 0	0, 6, 13 and 20
Trial 150738, Peach, Stanthorpe, Queensland	1. Untreated	-	-	0 (Harvest)
	2. DOMINEX DUO	100	20, 13, 6 and 0	0, 8, 15 and 22

DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in summerfruit (peach and nectarine). Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, >2 kg fruit were collected from 12 areas of each plot. Two samples were taken for each treatment with one being the Primary Sample and the other the Reserve Sample.

Alpha-cypermethrin residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/10 - DETERMINATION OF THE RESIDUES OF FOSETYL-ALUMINIUM IN PLUMS

The treatments and sampling times are presented in the table below:

Trial number and Location	Treatment	Rate Applied g/100 L	Application Method	Application Times	Sampling Times (DALA)
Trial 150740, Amiens, Queensland	1. Untreated	-	-	-	Harvest (9)
	2. ALIETTE	250	Foliar	Full leaf then mature flush (12.1 WALA)	Harvest (9)
	3. ALIETTE	90	Soil Drench	Full leaf then mature flush (12.1 WALA)	Harvest (9)
Trial 150741, Severnlea, Queensland	1. Untreated	-	-	-	Harvest (7)
	2. ALIETTE	250	Foliar	Full leaf then mature flush (12.1 WALA)	Harvest (7)
	3. ALIETTE	90	Soil Drench	Full leaf then mature flush (12.1 WALA)	Harvest (7)
Trial 150742, Fleurbaix, Queensland	1. Untreated	-	-	-	Harvest (9)
	2. ALIETTE	250	Foliar	Full leaf then mature flush (12.1 WALA)	Harvest (9)
	3. ALIETTE	90	Soil Drench	Full leaf then mature flush (12.1 WALA)	Harvest (9)
Trial 150743, Applethorpe, Queensland	1. Untreated	-	-	-	Harvest (7)
	2. ALIETTE	250	Foliar	Full leaf then mature flush (12.1 WALA)	Harvest (7)
	3. ALIETTE	90	Soil Drench	Full leaf then mature flush (12.1 WALA)	Harvest (7)

WALA = weeks after last application, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of fungicides in plums. Treatments were applied either by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant or as a soil drench applied to the drip zone ensuring that the drench dispersed no further than 40 cm from the base of each tree.

For each sample, >2 kg fruit were collected from 12 areas of each plot. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Fosetyl and phosphorous acid residues were determined according to a published analytical method:

"Quick Method for the Analysis of numerous Highly Polar Pesticides in Foods of Plant Origin via LC-MS/MS involving Simultaneous Extraction with Methanol (QuPPe-Method)", EURL-SRM, Version 9.2, October 2016.

HIA/GLP/15/12 - DETERMINATION OF THE RESIDUES OF ETOXAZOLE IN SNOW PEAS - PROTECTED CROPPING

The treatments and sampling times are presented in the table below:

Trial, Location and Timing	Treatment	Rate Applied mL/ha	Application Times DBH	Sampling Times DAT
Trial 151014 Murray Bridge, SA (Summer)	1. Untreated	-	-	14 (Harvest)
	2. PARAMITE	350	14	3, 7 and 14
Trial 151015 Virginia, SA (Winter)	1. Untreated	-	-	14 (Harvest)
	2. PARAMITE	350	14	3, 7 and 14

DBH = days before harvest, DAT = days after treatment

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in snow peas in protected cropping structures. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, forage or pods were collected from 12 areas of each plot. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Etoxazole residues were determined according to an analytical method developed at the test site:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

The snow pea forage samples were analysed for moisture content via a method of analysis developed at the test site:

"Determination of Moisture in Forage Materials", AATM-R-74, Revision 4, Eurofins Agroscience Testing Pty Ltd, January 2015.

HIA/GLP/15/13 - DETERMINATION OF THE RESIDUES OF HEXYTHIAZOX IN SNOW PEAS AND SUGAR SNAP PEAS - FIELD AND PROTECTED CROPPING

The treatments and sampling times are presented in the table below:

Trial, Location and Crop	Treatment	Rate Applied mL/100 L	Application Time DBH	Sampling Times DAT
Trial 151017 Murray Bridge, SA Snow Pea - PC	1. Untreated	-	-	14 (Harvest)
	2. CALIBRE	25	14	3, 7 and 14
Trial 151018 Glenore Grove, Qld Sugar Snap Pea - Field	1. Untreated	-	-	14 (Harvest)
	2. CALIBRE + BS1000	25 + 40	14	3, 7 and 14

DBH = days before harvest, DAT = days after treatment

The treatments were applied in a manner that simulated best commercial practice for the application of miticides in snow peas in protected cropping structures and sugar snap peas in field situations. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, forage or pods were collected from 12 areas of each plot. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Hexythiazox residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

The pea forage samples were analysed for moisture content via a method of analysis developed at the test site:

"Determination of Moisture in Forage Materials", AATM-R-74, Revision 4, Eurofins Agroscience Testing Pty Ltd, January 2015.

HIA/GLP/15/14 - DETERMINATION OF THE RESIDUES OF IPRODIONE IN CARROTS AND GREEN BEANS

The treatments and sampling times are presented in the table below:

Trial, Crop and Location	Treatment	Rate Applied	Application Times DBFS	Sampling Times
Trial 151020, Carrot, Virginia, South Australia	1. Untreated	-	-	Harvest
	2. ROVRAL AQUAFLO FUNGICIDE	1000 mL/ha	7 (9 weeks from planting) and 0	0, 14 and 28 DAT2
Trial 151021, Carrot, Fernvale, Queensland	1. Untreated	-	-	Harvest
	2. ROVRAL AQUAFLO FUNGICIDE	1000 mL/ha	8 (10 weeks from planting) and 0	0, 14 and 27 DAT2
Trial 151022, Green Bean, Fernvale, Queensland	1. Untreated	-	-	Harvest (7 DAT4)
	2. ROVRAL AQUAFLO FUNGICIDE	1000 mL/ha	21, 14, 7 and 0	0, 4 and 7 DAT4
Trial 151023, Green Bean, Bowen, Queensland	1. Untreated	-	-	Harvest (7 DAT4)
	2. ROVRAL AQUAFLO FUNGICIDE	1000 mL/ha	21, 14, 7 and 0	0, 3 and 7 DAT4

DBFS = days before first sampling, DAT [2] = days after the [second] application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in carrots and green beans. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

At least 12 carrot roots or 1 kg of green bean forage or 500 g pods were sampled from 12 areas of each plot for each sample. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Iprodione residues were determined according to an analytical method developed by Eurofins Agroscience Testing Pty Ltd:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

The green bean forage samples were analysed for moisture content via a method of analysis developed at the test site:

"Determination of Moisture in Forage Materials", AATM-R-74, Revision 4, Eurofins Agroscience Testing Pty Ltd, January 2015.

HIA/GLP/15/15 - DETERMINATION OF THE RESIDUES OF MALDISON IN CAPSICUMS AND CUCUMBERS – PROTECTED CROPPING

The treatments and sampling times are presented in the table below:

Trial Number and Location	Treatment	Rate Applied mL/100 L	Application Times DBH	Sampling Times DAT4
Trial 151025 Bargo, NSW Capsicum - PC	1. Untreated	-	-	3 (Harvest)
	2. FYFANON	295	24, 17, 10 and 3	0, 1, 2, 3 and 4
Trial 151026 Virginia, SA Capsicum - PC	1. Untreated	-	-	3 (Harvest)
	2. FYFANON	295	24, 17, 10 and 3	0, 1, 2, 3 and 5
Trial 151027 Kinkuna, Qld Cucumber - PC	1. Untreated	-	-	3 (Harvest)
	2. FYFANON	295	24, 17, 11 and 3	0, 1, 2, 3 and 5
Trial 151028 Virginia, SA Cucumber - PC	1. Untreated	-	-	3 (Harvest)
	2. FYFANON	295	24, 17, 10 and 3	0, 1, 2, 3 and 4

DBH = days before harvest, DAT4 = days after the 4th application of the treatment, Harvest – time of optimum commercial harvest to coincidence with 3 DAT4

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in capsicum and cucumber in protected cropping structures. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, fruit were collected from 12 areas of each plot. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Maldison residues were determined according to an analytical method developed at the test site:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/16 - DETERMINATION OF THE RESIDUES OF PYRIPROXYFEN IN GREEN BEANS

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied mL/ha	Application Times DBFS	Sampling Times DALA
Trial 151030 Bowen, Qld	1. Untreated	-	-	1 (First Harvest)
	2. ADMIRAL ADVANCE	500	14 and 0	0 and 1
Trial 151031 Fernvale, Qld	1. Untreated	-	-	1 (First Harvest)
	2. ADMIRAL ADVANCE	500	14 and 0	0 and 1

DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in green bean. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, forage or pods were collected from 12 areas of each plot. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Pyriproxyfen residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

The forage samples were analysed for moisture content via a method of analysis developed at the test site:

"Determination of Moisture in Forage Materials", AATM-R-74, Revision 4, Eurofins Agroscience Testing Pty Ltd, January 2015.

HIA/GLP/15/01 - DETERMINATION OF THE RESIDUES OF PHOSPHOROUS ACID IN PROCESSING TOMATO

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied	Application Times DBFS	Sampling Times DALA
Trial 160272, Echuca, Victoria	1. Untreated	-	-	Harvest (14 DALA)
	2. AGRI-FOS 600	1000 mL/ha then 3000 mL/ha (x 3 applications)	15 DATP then 22, 11 and 0 DBFS	0, 14, 21 and 28 DALA
Trial 160273, Rochester, Victoria	1. Untreated	-	-	Harvest (14 DALA)
	2. AGRI-FOS 600	1000 mL/ha then 3000 mL/ha (x 3 applications)	15 DATP then 22, 11 and 0 DBFS	0, 14, 21 and 28 DALA
Trial 160274, Colbinabbin, Victoria	1. Untreated	-	-	Harvest (14 DALA)
	2. AGRI-FOS 600	1000 mL/ha then 3000 mL/ha (x 3 applications)	14 DATP then 22, 11 and 0 DBFS	0, 14, 21 and 28 DALA
Trial 160275, Lockington, Victoria	1. Untreated	-	-	Harvest (14 DALA)
	2. AGRI-FOS 600	1000 mL/ha then 3000 mL/ha (x 3 applications)	15 DATP then 21, 10 and 0 DBFS	0, 14, 20 and 27 DALA

DATP = days after transplant, DBFS = days before first sampling, DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of fungicides in processing tomatoes. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

At least 2 kg of fruit were sampled from 12 areas of each plot for each sample. Two samples were taken for each treatment on each sampling date with one being the Primary Sample and the other the Reserve Sample.

Phosphorous acid residues were determined according to:

"Determination of Phosphorous Acid in Vegetables and Fruits by HPLC/MS/MS", AATM-R-127, Rev.2, April 2009, Agrisearch Analytical Pty Ltd.

HIA/GLP/15/05 - DETERMINATION OF RESIDUES OF IPRODIONE IN MANDARINS AND TANGELOS

The treatments and sampling times are presented in the table below:

Location and Crop	Treatment	Rate Applied mL/100 L	Application Times	Sampling Times DALA
Trial 160285, Mandarin, Sunlands, South Australia	1. Untreated	-	-	56 (Harvest)
	2. ROVRAL AQUAFLO	100	Spring flush with fruitlets less than 5 mm (November) Post thinning when fruit 20-30 mm (January) Autumn flush when fruit 30-40 mm (April)	56
Trial 160286, Mandarin, Red Cliffs Victoria	1. Untreated	-	-	57 (Harvest)
	2. ROVRAL AQUAFLO	100	Spring flush with fruitlets less than 5 mm September) Post thinning when fruit 20-30 mm (January) Autumn flush when fruit 30-40 mm (April)	57
Trial 160287, Tangelo, Sunlands, South Australia	1. Untreated	-	-	56 (Harvest)
	2. ROVRAL AQUAFLO	100	Spring flush with fruitlets less than 5 mm (November) Post thinning when fruit 20-30 mm (January) Autumn flush when fruit 30-40 mm (April)	56

DALA = days after last application

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in citrus (mandarin and tangelo). Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, >2 kg fruit were collected from 12 areas of each plot. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Iprodione residues were determined according to an analytical method developed by Eurofins Agroscience Testing Pty Ltd:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev.4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/04 - DETERMINATION OF THE RESIDUES OF IMIDACLOPRID IN BLUEBERRIES

The treatments and sampling times are presented in the table below:

Trial and Location (Year)	Treatment	Rate Applied per 100 m of row	Application Times	Sampling Times
Trial 160282 Wallaville, Qld (2017)	1. Untreated	-	-	28 DAFS
	2. CONFIDOR GUARD	14 mL	First open flowers visible (130 DBFS)	First Harvest then 14 and 28 DAFS
	3. CONFIDOR GUARD	28 mL	First open flowers visible (130 DBFS)	First Harvest then 14 and 28 DAFS
Trial 160283 Wallaville, Qld (2018)	1. Untreated	-	-	28 DAFS
	2. CONFIDOR GUARD	14 mL	1 week before flowering (71 DBFS)	First Harvest then 14 and 28 DAFS
	3. CONFIDOR GUARD	28 mL	1 week before flowering (71 DBFS)	First Harvest then 14 and 28 DAFS

DBFS = days before first sampling, DAFS = days after first sampling

The treatments were applied in a manner that simulated best commercial practice for the application of soil applied insecticides through trickle irrigation to blueberries.

For each sample, fruit were collected from 12 areas of each plot. Two samples were taken for each treatment with one being the Primary Sample and the other the Reserve Sample.

Imidacloprid residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev. 4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/02 - DETERMINATION OF THE RESIDUES OF CYPRODINIL AND FLUDIOXONIL IN BLUEBERRIES

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied kg/ha	Application Times DBFS	Sampling Times DALA
Trial 160277 Warnervale, NSW	1. Untreated	-	-	7
	2. SWITCH	1.0	28, 21, 14 and 7	7 - NCH
Trial 160278 Wallaville, Qld	1. Untreated	-	-	7
	2. SWITCH	1.0	29, 21, 14 and 7	7 - NCH

DBFS = days before first sampling, DALA = days after last application, NCH = normal commercial harvest

The treatments were applied in a manner that simulated best commercial practice for the application of insecticides in blueberry. Treatments were applied by boom spray in sufficient water to ensure even and thorough coverage of all parts of each plant.

For each sample, fruit were collected from 12 areas of each plot. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Cyprodinil and fludioxonil residues were determined according to:

"Determination of Multi-Pesticide Residues in Plant using DSPE", AATM-S-60.1, Rev. 4, January 2015, Eurofins Agroscience Testing Pty Ltd.

HIA/GLP/15/03 - DETERMINATION OF THE RESIDUES OF ABAMECTIN IN BLUEBERRIES

The treatments and sampling times are presented in the table below:

Trial and Location	Treatment	Rate Applied	Application Times (DBFS)	Sampling Times (DALA)
Trial 160280 Wallaville, Qld	1. Untreated	-	-	7
	2. VERTIMEC + Yeast Autolysate	25 mL/100 L with 15 L diluted solution/ha applied	29, 22, 15 and 7	7 - NCH

DBFS = days before first sampling, DALA = days after last application, NCH = normal commercial harvest

The treatments were applied in a manner that simulated best commercial practice for the application of abamectin in blueberries. Treatments were applied via a strip spray which was directed at the base of bushes.

For each sample, fruit were collected from 12 areas of each plot. Two samples were taken for each treatment at normal commercial harvest with one being the Primary Sample and the other the Reserve Sample.

Abamectin residues were determined according to an analytical method developed at the test site:

"Determination of Abamectin in Plant Materials and Processed Fractions", AATM-R-11, Revision 6, January 2015, Eurofins Agroscience Testing Pty Ltd.

Results

HIA/GLP/15/17 - DETERMINATION OF THE RESIDUES OF ETHEPHON IN BANANAS

Study Phases		**Dates**
Study Commencement (Study Plan Signed)		27-May-16
Field Phase (First Application to Final Sample)	150703, Deeral, Qld	30-Sep-16 to 12-Jul-17
	150704, Palmerston, Qld	12-Oct-16 to 11-Jul-17
	150705, Mirriwinni, Qld	13-Oct-16 to 12-Jul-17
	150706, Garradunga, Qld	14-Oct-16 to 12-Jul-17
	150707, Japoonvale, Qld	19-Sep-16 to 11-Jul-17
	150708, Kennedy, Qld	27-Sep-16 to 11-Apr-17
	150709, Windemere, Qld	22-Sep-16 to 25-May-17
	150710, Givelda, Qld	28-Sep-16 to 25-May-17
Analytical Phase (First Sample Received to Analytical Report Signed)		30-Jun-17 to 29-Jan-18
Study Completion (Final Report Signed)		14-Feb-18
Permit Submission		15-Feb-18

In all trials, a single application of PROMOTE PLUS GROWTH REGULATOR (900 g/L ethephon) was made at 4.8 mL/L (4 mL per pseudostem) to bananas at the nurse sucker management stage. Flesh and peel samples for residue analyses were taken at normal commercial harvest, 196-295 days after the application.

Residues in bananas were <LOD for both flesh and peel samples.

Recoveries of ethephon were determined to be 93-112% and 78-102% for flesh and peel respectively.

Summary of Results – Residues of Ethephon in Banana (Peel and Flesh) Following Applications of PROMOTE PLUS 900 GROWTH REGULATOR

Trial Number and Location	Sample Number	Treatment	Sampling Interval	Substrate	Ethephon (as received) (mg/kg)
150703, Deeral, Qld	150703-1	1. Untreated	Harvest (285 DALA)	Flesh	<LOD
	150703-2	1. Untreated	Harvest (285 DALA)	Peel	<LOD
	150703-3	2. PROMOTE PLUS	Harvest (285 DALA)	Flesh	<LOD
	150703-4	2. PROMOTE PLUS	Harvest (285 DALA)	Peel	<LOD
150704, Palmerston, Qld	150704-1	1. Untreated	Harvest (272 DALA)	Flesh	<LOD
	150704-2	1. Untreated	Harvest (272 DALA)	Peel	<LOD
	150704-3	2. PROMOTE PLUS	Harvest (272 DALA)	Flesh	<LOD
	150704-4	2. PROMOTE PLUS	Harvest (272 DALA)	Peel	<LOD
150705, Mirriwinni, Qld	150705-1	1. Untreated	Harvest (272 DALA)	Flesh	<LOD
	150705-2	1. Untreated	Harvest (272 DALA)	Peel	<LOD
	150705-3	2. PROMOTE PLUS	Harvest (272 DALA)	Flesh	<LOD
	150705-4	2. PROMOTE PLUS	Harvest (272 DALA)	Peel	<LOD
150706, Garradunga, Qld	150706-1	1. Untreated	Harvest (271 DALA)	Flesh	<LOD
	150706-2	1. Untreated	Harvest (271 DALA)	Peel	<LOD
	150706-3	2. PROMOTE PLUS	Harvest (271 DALA)	Flesh	<LOD
	150706-4	2. PROMOTE PLUS	Harvest (271 DALA)	Peel	<LOD
150707, Japoonvale, Qld	150707-1	1. Untreated	Harvest (295 DALA)	Flesh	<LOD
	150707-2	1. Untreated	Harvest (295 DALA)	Peel	<LOD
	150707-3	2. PROMOTE PLUS	Harvest (295 DALA)	Flesh	<LOD
	150707-4	2. PROMOTE PLUS	Harvest (295 DALA)	Peel	<LOD
150708, Kennedy, Qld	150708-1	1. Untreated	Harvest (196 DALA)	Flesh	<LOD
	150708-2	1. Untreated	Harvest (196 DALA)	Peel	<LOD
	150708-3	2. PROMOTE PLUS	Harvest (196 DALA)	Flesh	<LOD
	150708-4	2. PROMOTE PLUS	Harvest (196 DALA)	Peel	<LOD
150709, Windemere, Qld	150709-1	1. Untreated	Harvest (245 DALA)	Flesh	<LOD
	150709-2	1. Untreated	Harvest (245 DALA)	Peel	<LOD
	150709-3	2. PROMOTE PLUS	Harvest (245 DALA)	Flesh	<LOD
	150709-4	2. PROMOTE PLUS	Harvest (245 DALA)	Peel	<LOD
150710, Givelda, Qld	150710-1	1. Untreated	Harvest (239 DALA)	Flesh	<LOD
	150710-2	1. Untreated	Harvest (239 DALA)	Peel	<LOD
	150710-3	2. PROMOTE PLUS	Harvest (239 DALA)	Flesh	<LOD
	150710-4	2. PROMOTE PLUS	Harvest (239 DALA)	Peel	<LOD

LOD = Limit of Detection = 0.015 mg/kg

LOQ = Limit of Quantitation = 0.05 mg/kg

DALA = days after last application

HIA/GLP/15/18 - DETERMINATION OF THE RESIDUES OF CLOTHIANIDIN IN OLIVES

Study Phases		Dates
Study Commencement (Study Plan Signed)		26-May-16
Field Phase (First Application to Final Sample)	150712, Virginia, SA	26-May-16 to 25-Jul-16
	150713, Kialla East, Vic	28-Feb-17 to 04-May-17
Analytical Phase (First Sample Received to Analytical Report Signed)		14-Sep-16 to 02-Aug-17
Study Completion (Final Report Signed)		03-Aug-18
Permit Submission		28-Aug-17

In both trials, one application of SUMITOMO SAMURAI SYSTEMIC INSECTICIDE (500 g/kg clothianidin) was made at 40 g/100 L (20 g a.i./100 L) to olives. Samples for residue analysis were taken 56-57 days after the application at normal commercial harvest.

Residues of clothianidin olives were 0.08-0.027 mg/kg for olives (fruit) and <LOD mg/kg for olive oil for samples taken 56-57 days after the application of clothianidin.

Recovery of clothianidin in olives and oil was determined to be 79-125% and 66-85% respectively.

Summary of Results – Residues of Clothianidin in Olive and Olive Oil Following Applications of SUMITOMO SAMURAI SYSTEMIC INSECTICIDE

Trial Number and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Clothianidin (as received) (mg/kg)
150712, Virginia, SA	150712-1	1. Untreated	56 DALA	Fruit	<LOD
	150712-2	1. Untreated	56 DALA	Oil	<LOD
	150712-3	2. SAMURAI	56 DALA	Fruit	0.008*
	150712-4	2. SAMURAI	56 DALA	Oil	<LOD
150713, Kialla East, Vic	150713-1	1. Untreated	57 DALA	Fruit	<LOD
	150713-2	1. Untreated	57 DALA	Oil	<LOD
	150713-3	2. SAMURAI	57 DALA	Fruit	0.027
	150713-4	2. SAMURAI	57 DALA	Oil	<LOD

LOD = Limit of Detection = 0.003 mg/kg

LOQ = Limit of Quantitation = 0.01 mg/kg

DALA = days after last application

*Results are between LOD and LOQ, as the reported values are less than the LOQ, by definition, their accuracy and precision cannot be verified.

#Results for olive fruit are determined on olive flesh (skin + pulp) and are calculated on the whole fruit (flesh + seed).

HIA/GLP/15/19 - DETERMINATION OF THE RESIDUES OF METIRAM AND PYRACLOSTROBIN IN OLIVES

Study Phases		Dates
Study Commencement (Study Plan Signed)		26-May-16
Field Phase (First Application to Final Sample)	150715, Virginia, SA	26-May-16 to 7-Jul-16
	150716, Kialla East, Vic	15-Mar-17 to 26-Apr-17
Analytical Phase (First Sample Received to Analytical Report Signed)		14-Sep-16 to 10-Oct-18
Study Completion (Final Report Signed)		25-Oct-18
Permit Submission		30-Oct-18

In both trials, two applications of AERO FUNGICIDE (550 g/kg metiram and 50 g/kg pyraclostrobin) were made to olives at 200 and 400 g/100 L (110 + 10 and 220 + 20 g/ha respectively) at 42 and 21 days before harvest. Samples for residue analysis were taken 21 days after the last application at normal commercial harvest with a whole fruit sample retained and additional samples processed into olive oil.

Residues in olives (whole fruit) were 0.041-0.29 mg/kg for pyraclostrobin and <LOD-3.08 mg/kg for metiram for samples taken 21 days after the last application.

Residues in olive oil were 0.27-0.94 mg/kg for pyraclostrobin and <LOD-0.81 mg/kg for metiram for samples taken 21 days after the last application.

Recovery of pyraclostrobin and metiram was determined to be 91-98% and 90-111% respectively in olives (whole fruit) and 85-87% and 86-94% respectively in olive oil.

Summary of Results – Residues of Metiram and Pyraclostrobin in Olive and Olive Oil Following Applications of AERO FUNGICIDE

Trial Number and Location	Sample Number	Treatment	Sampling Interval	Substrate	Pyraclostrobin (as received) (mg/kg)	Metiram (as CS_2) (as received) (mg/kg)
150715, Virginia, SA	150715-1	1. Untreated	21 DALA	Fruit	<LOD	<LOD
	150715-2	2. AERO	21 DALA	Fruit	0.041	<LOD
	150715-3	3. AERO	21 DALA	Fruit	0.29	0.39
	150715-4	1. Untreated	21 DALA	Oil	0.042*	0.25(0.20)
	150715-5	2. AERO	21 DALA	Oil	0.27	<LOD
	150715-6	3. AERO	21 DALA	Oil	0.94	<LOD
150716, Kialla East, Vic	150716-1	1. Untreated	21 DALA	Fruit	<LOD	<LOD
	150716-2	2. AERO	21 DALA	Fruit	0.1	0.64
	150716-3	3. AERO	21 DALA	Fruit	0.23	3.08
	150716-4	1. Untreated	21 DALA	Oil	<LOD	<LOD
	150716-5	2. AERO	21 DALA	Oil	0.46	0.44
	150716-6	3. AERO	21 DALA	Oil	0.91	0.81

LOD = Limit of Detection = 0.015 and 0.1 mg/kg for pyraclostrobin and metiram respectively
LOQ = Limit of Quantitation = 0.05 and 0.2 mg/kg for pyraclostrobin and metiram respectively
DALA = days after last application
Note: Results for olive fruit are determined on olive fruit flesh and are calculated on the whole fruit (olive fruit flesh+stone).

HIA/GLP/15/20 - DETERMINATION OF THE RESIDUES OF BETA-CYFLUTHRIN IN PAPAYA

Study Phases		Dates
Study Commencement (Study Plan Signed)		01-Jun-16
Field Phase (First Application to Final Sample)	150718, Mareeba, Qld	22-Jul-16 to 7-Jul-16
	150719, Deeral, Qld	04-Jul-16 to 15-Aug-16
Analytical Phase (First Sample Received to Analytical Report Signed)		05-Dec-16 to 09-Mar-17
Study Completion (Final Report Signed)		19-Apr-17
Permit Submission		14-Jul-17

In all trials, two applications of BULLDOCK 25 EC INSECTICIDE (25 g/L beta-cyfluthrin) were made to papaya at 50 mL/100 L (1.25 g ai/100 L) at an interval of 21 days. Samples for residue analysis were taken 0, 1 and 3 days after the last application.

Residues in papaya ranged from <LOD to 0.16 mg/kg, <LOD to 0.28 mg/kg mg/kg and <LOD to 0.19 mg/kg zero, one and three days after the last application respectively. Recovery of cyfluthrin was determined to be between 91% and 111%.

Summary of Results – Residues of Cyfluthrin in Papaya Following Applications of BULLDOCK 25 EC INSECTICIDE

Trial Number and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Cyfluthrin (as received) (mg/kg)
150718, Mareeba, Qld	150718-1	2. BULLDOCK	0 DAT2	Fruit	0.012
	150718-2	2. BULLDOCK	0 DAT2	Peel	0.15
	150718-3	2. BULLDOCK	0 DAT2	Flesh	<LOD
	150718-4	2. BULLDOCK	1 DAT2	Fruit	0.014
	150718-5	2. BULLDOCK	1 DAT2	Peel	0.28
	150718-6	2. BULLDOCK	1 DAT2	Flesh	<LOD
	150718-7	1. Untreated	3 DAT2	Fruit	<LOD
	150718-8	1. Untreated	3 DAT2	Peel	<LOD
	150718-9	1. Untreated	3 DAT2	Flesh	<LOD
	150718-10	2. BULLDOCK	3 DAT2	Fruit	0.011
	150718-11	2. BULLDOCK	3 DAT2	Peel	0.19
	150718-12	2. BULLDOCK	3 DAT2	Flesh	<LOD
150719, Deeral, Qld	150719-1	2. BULLDOCK	0 DAT2	Fruit	0.014
	150719-2	2. BULLDOCK	0 DAT2	Peel	0.16
	150719-3	2. BULLDOCK	0 DAT2	Flesh	<LOD
	150719-4	2. BULLDOCK	1 DAT2	Fruit	0.029
	150719-5	2. BULLDOCK	1 DAT2	Peel	0.13
	150719-6	2. BULLDOCK	1 DAT2	Flesh	<LOD
	150719-7	1. Untreated	3 DAT2	Fruit	<LOD
	150719-8	1. Untreated	3 DAT2	Peel	<LOD
	150719-9	1. Untreated	3 DAT2	Flesh	<LOD
	150719-10	2. BULLDOCK	3 DAT2	Fruit	0.016
	150719-11	2. BULLDOCK	3 DAT2	Peel	0.093
	150719-12	2. BULLDOCK	3 DAT2	Flesh	<LOD

LOD = Limit of Detection = 0.005 mg/kg
LOQ = Limit of Quantitation = 0.01 mg/kg
DAT2 = days after the second application of treatments

HIA/GLP/15/06 - DETERMINATION OF THE RESIDUES OF AZOXYSTROBIN IN RUBUS SPECIES

Study Phases		Dates
Study Commencement (Study Plan Signed)		17-Jun-16
Field Phase (First Application to Final Sample)	150721, Silvanberry (PC) Stirling, SA	18-Oct-16 to 18-Nov-16
	150722, Raspberry (PC) Warnervale, NSW	11-Oct-16to 11-Nov-16
	150723, Blackberry (Open field) Myrtleford, Vic	15-Dec-16 to 16-Jan-17
	150724, Raspberry (Open field) Stanthorpe, Qld	07-Mar-17 to 06-Apr-17
Analytical Phase (First Sample Received to Analytical Report Signed)		04-Nov-16 to 03-Jul-17
Study Completion (Final Report Signed)		20-Jul-17
Permit Submission		21-Jul-17

In all trials, three applications of AMISTAR 250 SC FUNGICIDE (250 g/L azoxystrobin) were made, at 80 mL/100 L (20 g ai/100 L) at an interval of 13-15 days, to various rubus species (silvanberry, raspberry and blackberry) grown in protected cropping situations and open fields (two trials each). Samples for residue analysis were taken 0, 1 and 3-4 days after the last application.

Residues of azoxystrobin in rubus species are summarised in the table below:

Cropping Situation	Sampling Interval (DALA)	Azoxystrobin (as received) (mg/kg)
Protected Cropping	0	0.19-0.99
	1	2.93-0.22
	3	2.23-0.11
Open Field	0	1.13-0.11
	1	1.21-0.11
	3-4	0.34-0.11

Recovery of azoxystrobin was determined to be between 76% and 106%.

Summary of Results – Residues of Azoxystrobin in Rubus Species (Protected Cropping and Open Field) Following Applications of AMISTAR 250 SC FUNGICIDE

Trial, Species and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Azoxystrobin (as received) (mg/kg)
150721, Silvanberry (PC) Stirling, South Australia	150721-1	2. Azoxystrobin	0 DALA	Fruit	0.99
	150721-2	1. Untreated	1 DALA	Fruit	<LOD
	150721-3	2. Azoxystrobin	1 DALA	Fruit	2.93
	150721-4	2. Azoxystrobin	3 DALA	Fruit	2.23
150722, Raspberry (PC) Warnervale, New South Wales	150722-1	2. Azoxystrobin	0 DALA	Fruit	0.19
	150722-2	1. Untreated	1 DALA	Fruit	<LOD
	150722-3	2. Azoxystrobin	1 DALA	Fruit	0.22
	150722-4	2. Azoxystrobin	3 DALA	Fruit	0.11
150723, Blackberry (Open field) Myrtleford, Victoria	150723-1	2. Azoxystrobin	0 DALA	Fruit	1.13
	150723-2	1. Untreated	1 DALA	Fruit	<LOD
	150723-3	2. Azoxystrobin	1 DALA	Fruit	1.21
	150723-4	2. Azoxystrobin	4 DALA	Fruit	0.34
150724, Raspberry (Open field) Stanthorpe, Queensland	150724-1	2. Azoxystrobin	0 DALA	Fruit	0.11
	150724-2	1. Untreated	1 DALA	Fruit	<LOD
	150724-3	2. Azoxystrobin	1 DALA	Fruit	0.11
	150724-4	2. Azoxystrobin	3 DALA	Fruit	0.11

HIA/GLP/15/07 - DETERMINATION OF THE RESIDUES OF BIFENTHRIN IN RUBUS SPECIES

Study Phases		Dates
Study Commencement (Study Plan Signed)		17-Jun-16
Field Phase (First Application to Final Sample)	150726, Silvanberry (PC) Stirling, SA	18-Oct-16 to 11-Nov-16
	150727, Raspberry (PC) Warnervale, NSW	11-Oct-16to 04-Nov-16
	150728, Blackberry (Open field) Myrtleford, Vic	23-Dec-16 to 16-Jan-17
	150729, Raspberry (Open field) Stanthorpe, Qld	07-Mar-17 to 01-Apr-17
Analytical Phase (First Sample Received to Analytical Report Signed)		24-Nov-16 to 30-Jun-17
Study Completion (Final Report Signed)		21-Jul-17
Permit Submission		21-Jul-17

In all trials, four applications of VENOM 240 SC INSECTICIDE (240 g/L bifenthrin) were made, at 250 mL/ha (60 g ai/100 L) at an interval of 7 days, to various rubus species grown in protected structures and open field. Samples for residue analysis were taken 0, 1 and 3 days after the last application.

Residues of bifenthrin in rubus species are summarised in the table below:

Cropping Situation	Sampling Interval (DALA)	Bifenthrin (as received) (mg/kg)
Protected Cropping	0	0.16-1.44
	1	0.071-1.47
	3	0.067-0.87
Open Field	0	0.14-0.80
	1	0.070-0.48
	3-4	0.060-0.55

Recoveries in rubus for bifenthrin were determined to be 64-117%.

Summary of Results – Residues of Bifenthrin in Rubus Species (Protected Cropping and Open Field) Following Applications of VENOM 240 SC INSECTICIDE

Trial, Species and Location	**Sample Number**	**Treatment**	**Sampling Interval from Application Number**	**Substrate**	**Bifenthrin (as received) (mg/kg)**
150726, Silvanberry (PC) Stirling, South Australia	150726-1	2. VENOM 240 SC	0 DALA	Fruit	1.44
	150726-2	1. Untreated	1 DALA	Fruit	<LOD
	150726-3	2. VENOM 240 SC	1 DALA	Fruit	1.47
	150726-4	2. VENOM 240 SC	3 DALA	Fruit	0.87
150727, Raspberry (PC) Warnervale, New South Wales	150727-1	2. VENOM 240 SC	0 DALA	Fruit	0.16
	150727-2	1. Untreated	1 DALA	Fruit	<LOD
	150727-3	2. VENOM 240 SC	1 DALA	Fruit	0.071
	150727-4	2. VENOM 240 SC	3 DALA	Fruit	0.067
150728, Blackberry (Open field) Myrtleford, Victoria	150728-1	2. VENOM 240 SC	0 DALA	Fruit	0.80
	150728-2	1. Untreated	1 DALA	Fruit	<LOD
	150728-3	2. VENOM 240 SC	1 DALA	Fruit	0.48
	150728-4	2. VENOM 240 SC	4 DALA	Fruit	0.55
150729, Raspberry (Open field) Stanthorpe, Queensland	150729-1	2. VENOM 240 SC	0 DALA	Fruit	0.14
	150729-2	1. Untreated	1 DALA	Fruit	<LOD
	150729-3	2. VENOM 240 SC	1 DALA	Fruit	0.070
	150729-4	2. VENOM 240 SC	3 DALA	Fruit	0.060

HIA/GLP/15/08 - DETERMINATION OF THE RESIDUES OF METAXYL AND MANCOZEB IN RUBUS SPECIES

Study Phases		**Dates**
Study Commencement (Study Plan Signed)		17-Jun-16
Field Phase (First Application to Final Sample)	150731, Silvanberry (PC) Stirling, SA	15-Aug-16 to 11-Nov-16
	150732, Raspberry (PC) Warnervale, NSW	18-Oct-16to 16-Dec-16
	150733, Blackberry (Open field) Myrtleford, Vic	23-Sep-16 to 13-Jan-17
	150734, Raspberry (Open field) Stanthorpe, Qld	28-Feb-17 to 17-Apr-17
Analytical Phase (First Sample Received to Analytical Report Signed)		24-Nov-16 to 28-Jun-17
Study Completion (Final Report Signed)		21-Jul-17
Permit Submission		21-Jul-17

In all trials, four applications of RIDOMIL GOLD MZ FUNGICIDE (640 g/kg mancozeb and 40 g/kg metalaxyl-m) were made at 2.5 kg/ha (1600 g ai/ha + 100 g a.i./ha) at bud burst, then 14-15 days later, followed by 9-10 and 0 days before first sample, to various rubus species (silvanberry, raspberry and blackberry) grown in protected cropping and open fields (two trials each). Samples for residue analysis were taken 0, 3-4, 6-7 and 14 days after the last application.

Residues of metalaxyl and mancozeb in rubus species are summarised in the table below:

Cropping Situation	Sampling Interval (DALA)	Metalaxyl (as received) (mg/kg)	Mancozeb (as CS_2) (as received) (mg/kg)	Mancozeb (as received) (mg/kg)
Protected Cropping	0	0.31 - 0.42	4.87 - 4.98	8.57 – 8.76
	3-4	0.77 - 0.12	1.78 - 5.98	3.13 - 10.5
	6-7	0.058 - 0.11	1.05 - 6.22	1.84 – 10.9
	14	0.019 - 0.060	0.34 – 4.78	0.60 - 8.42
Open Field	0	0.079 - 2.76	0.92 – 38.6	1.62 – 68.0
	3-4	0.036 – 0.47	0.93 – 14.6	1.63 – 25.6
	6-7	0.018 – 0.30	0.55 – 11.7	0.98 – 20.6
	14	0.011 – 0.11	0.27 – 10.6	0.47 – 18.7

Recoveries in rubus for metalaxyl and mancozeb (as CS2) being 91-112% and 71-123% respectively.

Summary of Results – Residues of Metalaxyl and Mancozeb (expressed as CS2) in Rubus Species (Protected Cropping and Open Field) Following Applications of RIDOMIL GOLD MZ FUNGICIDE

Trial, Species and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Metalaxyl (as received) (mg/kg)	Mancozeb (as CS_2) (as received) (mg/kg)	Mancozeb (as received) (mg/kg)
Trial 150731, Silvanberry (Protected Cropping) Stirling, South Australia	150731-1	2. RIDOMIL GOLD MZ	0 DALA	Fruit	0.42	4.87	8.57
	150731-2	2. RIDOMIL GOLD MZ	3 DALA	Fruit	0.12	5.98	10.5
	150731-3	2. RIDOMIL GOLD MZ	7 DALA	Fruit	0.11	6.22	10.9
	150731-4	1. Untreated	14 DALA	Fruit	<LOD	<LOD	<LOD
	150731-5	2. RIDOMIL GOLD MZ	14 DALA	Fruit	0.060	4.78	8.42
Trial 150732, Raspberry (Protected Cropping) Warnervale, NSW	150732-1	2. RIDOMIL GOLD MZ	0 DALA	Fruit	0.31	4.98	8.76
	150732-2	2. RIDOMIL GOLD MZ	3 DALA	Fruit	0.077	1.78	3.13
	150732-3	2. RIDOMIL GOLD MZ	7 DALA	Fruit	0.058	1.05	1.84
	150732-4	1. Untreated	14 DALA	Fruit	<LOD	<LOD	<LOD
	150732-5	2. RIDOMIL GOLD MZ	14 DALA	Fruit	0.019	0.34	0.60
Trial 150733, Blackberry (Open field) Myrtleford, Victoria	150733-1	2. RIDOMIL GOLD MZ	0 DALA	Fruit	2.76	38.6	68.0
	150733-2	2. RIDOMIL GOLD MZ	4 DALA	Fruit	0.47	14.6	25.6
	150733-3	2. RIDOMIL GOLD MZ	6 DALA	Fruit	0.30	11.7	20.6
	150733-4	1. Untreated	14 DALA	Fruit	<LOD	<LOD	<LOD
	150733-5	2. RIDOMIL GOLD MZ	14 DALA	Fruit	0.11	10.6	18.7
Trial 150734, Raspberry (Open field) Stanthorpe, Queensland	150734-1	2. RIDOMIL GOLD MZ	0 DALA	Fruit	0.079	0.92	1.62
	150734-2	2. RIDOMIL GOLD MZ	3 DALA	Fruit	0.036	0.93	1.63
	150734-3	2. RIDOMIL GOLD MZ	7 DALA	Fruit	0.018	0.55	0.98
	150734-4	1. Untreated	14 DALA	Fruit	<LOD	<LOD	<LOD
	150734-5	2. RIDOMIL GOLD MZ	14 DALA	Fruit	0.011	0.27	0.47

HIA/GLP/15/09 - DETERMINATION OF THE RESIDUES OF ALPHA-CYPERMETHRIN IN SUMMERFRUIT

Study Phases		Dates
Study Commencement (Study Plan Signed)		17-Jun-16
Field Phase (First Application to Final Sample)	150736, Nectarine, Echunga, SA	12-Jan-17 to 23-Feb-17
	150737, Peach, Shepparton East, Vic	12-Jan-17 to 22-Feb-17
	150738, Peach, Stanthorpe, Qld	21-Dec-16 to 8-Feb-17
Analytical Phase (First Sample Received to Analytical Report Signed)		20-Feb-17 to 8-Aug-17
Study Completion (Final Report Signed)		17-Aug-17
Permit Submission		29-Aug-17

In all trials, four applications of DOMINEX DUO SYSTEMIC INSECTICIDE (100 g/L alpha-cypermethrin) were made at 100 mL/100 L (10 g a.i./100 L) at intervals of 6-8 days to summerfruit (peach and nectarine). Samples for residue analysis were taken 0, 6-8, 13-15 and 20-22 days after the last application.

Residues in nectarine and peaches were 0.27-0.73 mg/kg, 0.17-0.27, 0.055-0.38 and 0.049-0.23 for samples taken 0 (commercial harvest), 6-8, 13-15 and 20-22 days after last application respectively.

Recovery of cypermethrin was determined to be 86-115%.

Summary of Results – Residues of Cypermethrin in Stone Fruit Following Applications of DOMINEX DUO SYSTEMIC INSECTICIDE

Trial, Crop and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Cypermethrin (as received) (mg/kg)	Cypermethrin (corrected for stone) (mg/kg)#
Trial 150736, Nectarine, Echunga, South Australia	150736-1	1. Untreated	0 DALA	Fruit	<LOD	<LOD
	150736-2	2. DOMINEX DUO	0 DALA	Fruit	0.32	0.27
	150736-3	2. DOMINEX DUO	7 DALA	Fruit	0.19	0.17
	150736-4	2. DOMINEX DUO	14 DALA	Fruit	0.063	0.055
	150736-5	2. DOMINEX DUO	21 DALA	Fruit	0.054	0.049
Trial 150737, Peach, Shepparton East, Victoria	150737-1	1. Untreated	0 DALA	Fruit	<LOD	<LOD
	150737-2	2. DOMINEX DUO	0 DALA	Fruit	0.67	0.57
	150737-3	2. DOMINEX DUO	6 DALA	Fruit	0.21	0.19
	150737-4	2. DOMINEX DUO	13 DALA	Fruit	0.17	0.16
	150737-5	2. DOMINEX DUO	20 DALA	Fruit	0.064	0.060
Trial 150738, Peach, Stanthorpe, Queensland	150738-1	1. Untreated	0 DALA	Fruit	<LOD	<LOD
	150738-2	2. DOMINEX DUO	0 DALA	Fruit	0.91	0.73
	150738-3	2. DOMINEX DUO	8 DALA	Fruit	0.29	0.27
	150738-4	2. DOMINEX DUO	15 DALA	Fruit	0.41	0.38
	150738-5	2. DOMINEX DUO	22 DALA	Fruit	0.24	0.23

LOD = Limit of Detection = 0.003 mg/kg.
LOQ = Limit of Quantitation = 0.01 mg/kg.
#Results are determined on peach or nectarine flesh (skin + pulp) and are calculated on the whole fruit (flesh + stone). DALA = days after last application

HIA/GLP/15/10 - DETERMINATION OF THE RESIDUES OF FOSETYL-ALUMINIUM IN PLUMS

Study Phases		Dates
Study Commencement (Study Plan Signed)		17-Jun-16
Field Phase (First Application to Final Sample)	150740, Amiens, Queensland	04-Oct-16 to 06-Jan-17
	150741, Severnlea, Queensland	04-Oct-16 to 04-Jan-17
	150742, Fleurbaix, Queensland	04-Oct-16 to 06-Jan-17
	150743, Applethorpe, Queensland	04-Oct-16 to 04-Jan-17
Analytical Phase (First Sample Received to Analytical Report Signed)		20-Feb-17 to 07-Aug-17
Study Completion (Final Report Signed)		27-Sep-17
Permit Submission		27-Sep-17

In all trials, two applications of ALIETTE SYSTEMIC FUNGICIDE (800 g/kg fosetyl-aluminum) were made as a foliar application at 250 g/100 L (200 g a.i./ha) or as a soil drench at 90 g/100 L (72 g a.i./100L) to plums. Applications were made at full leaf and mature flush, 12.1 weeks apart. Samples for residue analysis were taken at normal commercial harvest (7-9 days after the last application).

Residues in plums were 0.066-0.090 mg/kg for fosetyl and 1.14-4.40 mg/kg for phosphorous acid for foliar applications and <LOD for fosetyl and <LOD-2.80 mg/kg for phosphorous acid for soil drench applications for samples taken 7-9 days after the last application.

Residues of phosphorous acid were detected in the untreated samples for Trial 150741. The level detected was <LOQ and so by definition, the accuracy and precision cannot be verified.

Recovery of fosetyl and phosphorous acid were determined to be 66-100% and 82-105% respectively.

Summary of Results – Residues of Fosetyl-aluminum in Plums Following Applications of ALIETTE SYSTEMIC FUNGICIDE

Trial number and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Fosetyl (as received) (mg/kg)#	Phosphorous Acid (as received) (mg/kg)#
Trial 150740, Amiens, Queensland	150740-1	1. Untreated	9 DALA	Fruit	<LOD	<LOD
	150740-2	2. ALIETTE - foliar	9 DALA	Fruit	0.090	1.14
	150740-3	3. ALIETTE – drench	9 DALA	Fruit	<LOD	2.80
Trial 150741, Severnlea, Queensland	150741-1	1. Untreated	7 DALA	Fruit	<LOD	0.75*
	150741-2	2. ALIETTE - foliar	7 DALA	Fruit	0.066	2.44
	150741-3	3. ALIETTE – drench	7 DALA	Fruit	<LOD	1.21
Trial 150742, Fleurbaix, Queensland	150742-1	1. Untreated	9 DALA	Fruit	<LOD	<LOD
	150742-2	2. ALIETTE - foliar	9 DALA	Fruit	0.076	4.40
	150742-3	3. ALIETTE – drench	9 DALA	Fruit	<LOD	<LOD
Trial 150743, Applethorpe, Queensland	150743-1	1. Untreated	7 DALA	Fruit	<LOD	<LOD
	150743-2	2. ALIETTE - foliar	7 DALA	Fruit	0.088	1.49
	150743-3	3. ALIETTE – drench	7 DALA	Fruit	<LOD	1.06

LOD = Limit of Detection = 0.015 mg/kg for fosetyl; 0.3 mg/kg for phosphorous acid.
LOQ = Limit of Quantitation = 0.05 mg/kg for fosetyl; 1 mg/kg for phosphorous acid.
DALA = days after last application
#Results are determined on plum flesh (skin + pulp) and are calculated on the whole fruit (flesh + stone).

HIA/GLP/15/12 - DETERMINATION OF THE RESIDUES OF ETOXAZOLE IN SNOW PEAS - PROTECTED CROPPING

Study Phases		Dates
Study Commencement (Study Plan Signed)		23-Jun-16
Field Phase (First Application to Final Sample)	151014, Murray Bridge, SA (Summer)	11-Sep-17 to 25-Sep-17
	151015, Virginia, SA (Winter)	05-Dec-16 to 19-Dec-17
Analytical Phase (First Sample Received to Analytical Report Signed)		20-Feb-17 to 24-Nov-17
Study Completion (Final Report Signed)		13-Dec-17
Permit Submission		15-Dec-17

In both trials, a single application of PARAMITE SELECTIVE MITICIDE (110 g/L etoxazole) was made at 350 mL/ha (38.5 g a.i./ha) at an interval of 14 days before harvest to snow peas in protected cropping structures. Samples for residue analysis were taken 3, 7 and 14 days after application with the final sample taken to coincide with normal commercial harvest.

Etoxazole residues in snow peas in protected cropping structures were 1.76-10.3, 0.513-6.23 and 0.090-7.45 mg/kg for forage samples taken 3, 7 and 14 days after treatment respectively with <LOD-0.003 mg/kg detected in pod samples taken 14 day after application.

Recoveries of etoxazole were determined to be 91-106% and 90-107% for forage and pods respectively.

Summary of Results – Residues of Etoxazole in Snow peas in Protected Cropping Structures Following Applications of PARAMITE SELECTIVE MITICIDE

Trial, Location and Timing	Sample Number	Treatment	Sampling Interval DAT	Substrate	Etoxazole (as received) (mg/kg)	% Moisture	Etoxazole (as dry basis) (mg/kg)#
Trial 151014 Murray Bridge, SA (Summer)	151014-1	2. PARAMITE	3 DAT	Forage	1.33	87.1	10.3
	151014-2	2. PARAMITE	7 DAT	Forage	0.772	87.6	6.23
	151014-3	1. Untreated	14 DAT	Pods	<LOD	-	-
	151014-4	1. Untreated	14 DAT	Forage	<LOD	88.1	<LOD
	151014-5	2. PARAMITE	14 DAT	Pods	0.003*	-	-
	151014-6	2. PARAMITE	14 DAT	Forage	1.06	85.8	7.45
Trial 151015 Virginia, SA (Winter)	151015-1	2. PARAMITE	3 DAT	Forage	0.267	84.8	1.76
	151015-2	2. PARAMITE	7 DAT	Forage	0.086	83.1	0.513
	151015-3	1. Untreated	14 DAT	Pods	<LOD	-	-
	151015-4	1. Untreated	14 DAT	Forage	0.004*	75.5	0.016*
	151015-5	2. PARAMITE	14 DAT	Pods	<LOD	-	-
	151015-6	2. PARAMITE	14 DAT	Forage	0.020	77.8	0.090

LOD = Limit of Detection = 0.003 mg/kg
LOQ = Limit of Quantitation = 0.01 mg/kg
DAT = days after treatment
Results marked with * are between LOD and LOQ, as the reported values are less than the LOQ, by definition, their accuracy and precision cannot be verified.
#Etoxazole results for forage samples are corrected for the moisture content.

HIA/GLP/15/13 - DETERMINATION OF THE RESIDUES OF HEXYTHIAZOX IN SNOW PEAS AND SUGAR SNAP PEAS - FIELD AND PROTECTED CROPPING

Study Phases		Dates
Study Commencement (Study Plan Signed)		23-Jun-16
Field Phase (First Application to Final Sample)	151017, Murray Bridge, SA Snow Pea - PC	11-Sep-17 to 25-Sep-17
	151085, Glenore Grove, Qld Sugar Snap Pea - Field	11-Jul-17 to 25-Jul-17
Analytical Phase (First Sample Received to Analytical Report Signed)		11-Aug-17 to 13-Dec-17
Study Completion (Final Report Signed)		10-Jan-18
Permit Submission		20-Feb-18

In both trials, a single application of CROP CARE CALIBRE 100EC MITICIDE (100 g/L hexythiazox) was made at 25 mL/100 L (2.5 g a.i./100 L) at an interval of 14 days before harvest to snow peas (protected cropping) or sugar snap peas (field). Forage samples for residue analysis were taken 3, 7 and 14 days after the application with the final sample to coincide with normal commercial harvest and hence pods were also collected.

Hexythiazox residues in snow peas in protected cropping structures were 4.37, 4.45 and 3.10 mg/kg for forage samples taken 3, 7 and 14 days after the application with <LOD detected in pod samples taken 14 day after application.

Hexythiazox residues in field grown sugar snap peas were 2.16, 2.36 and 1.13 mg/kg for forage samples taken 3, 7 and 14 days after the application with <LOD detected in pod samples taken 14 day after treatment.

Recoveries of hexythiazox were determined to be 87-111% and 87-122% for forage and pods respectively.

Summary of Results – Residues of Hexythiazox in Peas Following Applications of CALIBRE MITICIDE

Trial, Location and Crop	Sample Number	Treatment	Sampling Interval DALA	Substrate	Hexythiazox (as received) (mg/kg)	% Moisture	Hexythiazox (as dry basis) (mg/kg)#
Trial 151017 Murray Bridge, SA Snow Pea - PC	151017-1	2. CALIBRE	3 DALA	Forage	0.581	86.7	4.37
	151017-2	2. CALIBRE	7 DALA	Forage	0.557	87.5	4.45
	151017-3	1. Untreated	14 DALA	Pods	<LOD	-	-
	151017-4	1. Untreated	14 DALA	Forage	<LOD	87.8	<LOD
	151017-5	2. CALIBRE	14 DALA	Pods	<LOD	-	-
	151017-6	2. CALIBRE	14 DALA	Forage	0.450	85.5	3.10
Trial 151018 Glenore Grove, Qld Sugar Snap Pea - Field	151018-1	2. CALIBRE	3 DALA	Forage	0.320	85.2	2.16
	151018-2	2. CALIBRE	7 DALA	Forage	0.281	88.1	2.36
	151018-3	1. Untreated	14 DALA	Pods	<LOD	-	-
	151018-4	1. Untreated	14 DALA	Forage	<LOD	83.0	<LOD
	151018-5	2. CALIBRE	14 DALA	Pods	<LOD	-	-
	151018-6	2. CALIBRE	14 DALA	Forage	0.013	83.3	1.13

LOD = Limit of Detection = 0.003 mg/kg
LOQ = Limit of Quantitation = 0.01 mg/kg
DALA = days after last application
#Hexythiazox results for forage samples are corrected for the moisture content.

HIA/GLP/15/14 - DETERMINATION OF THE RESIDUES OF IPRODIONE IN CARROTS AND GREEN BEANS

Study Phases		Dates
Study Commencement (Study Plan Signed)		18-May-16
Field Phase (First Application to Final Sample)	151020, Carrot, Virginia, SA	31-Oct-16 to 05-Dec-16
	151021, Carrot, Fernvale, Qld	29-Jun-16 to 23-Aug-16
	151022, Green Bean, Fernvale, Qld	19-May-16 to 16-Jun-16
	151023, Green Bean, Bowen, Qld	28-Sep-16 to 26-Oct-16
Analytical Phase (First Sample Received to Analytical Report Signed)		05-Dec-16 to 02-Jun-17
Study Completion (Final Report Signed)		19-Jul-17
Permit Submission		20-Feb-18

In the carrot trials, two applications of ROVRAL AQUAFLO FUNGICIDE (500 g/L iprodione) were made at 1000 mL/ha (500 g ai/ha) at an interval of 7-8 days to carrots commencing 9-10 weeks after planting. Root samples for residue analysis were taken 0, 14 and 27-28 days after the last application. The final sample coincided with commercial harvest in both trials.

Residues in carrot ranged from 0.037 to 0.74 mg/kg, 0.020 to 0.15 mg/kg mg/kg and 0.029 to 0.12 mg/kg 0, 14 and 27-28 days after the last application respectively.

In the green bean trials, four applications of ROVRAL AQUAFLO FUNGICIDE (500 g/L iprodione) were made at 1000 mL/ha (500 g ai/ha) at an interval of 7 days commencing 28 days before commercial harvest. Forage samples for residue analysis were taken 0, 3-4 and 7 days after the last application with pod samples also being taken at the final sampling time.

Residues in green bean forage (presented on an as dry basis) ranged from 74.8 to 241 mg/kg, 93 to 131 mg/kg and 44.5 to 16.9 mg/kg 0, 3-4 and 7 days after the last application respectively. Residues in green bean pods (presented on an as received basis) at 7 days after the last application ranged from 0.11 to 0.48 mg/kg.

Recovery of Iprodione was determined to be 86-119% for roots, 94-108% for forage and 95-109 for pods.

Summary of Results – Residues of Iprodione in Carrot Following Applications of ROVRAL AQUAFLO FUNGICIDE

Trial and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Iprodione (as received) (mg/kg)
151020, Virginia, South Australia	151020-1	2. ROVRAL AQUALFLO	0 DAT2	Roots	0.74
	151020-2	2. ROVRAL AQUALFLO	14 DAT2	Roots	0.15
	151020-4	1. Untreated Control	28 DAT2 (Harvest)	Roots	<LOD
	151020-5	2. ROVRAL AQUALFLO	28 DAT2 (Harvest)	Roots	0.12
Trial 151021, Fernvale, Queensland	151021-1	2. ROVRAL AQUALFLO	0 DAT2	Roots	0.037
	151021-2	2. ROVRAL AQUALFLO	14 DAT2	Roots	0.020
	151021-4	1. Untreated Control	27 DAT2 (Harvest)	Roots	<LOD
	151021-5	2. ROVRAL AQUALFLO	27 DAT2 (Harvest)	Roots	0.029

LOD = Limit of Detection = 0.02 mg/kg
LOQ = Limit of Quantitation = 0.05 mg/kg
DAT2 = days after the second application of treatments

Summary of Results – Residues of Iprodione in Green Beans Following Applications of ROVRAL AQUAFLO FUNGICIDE

Trial and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Iprodione (as received) (mg/kg)	Moisture (%)	Iprodione (as dry basis) (mg/kg)
Trial 151022, Fernvale, Queensland	151022-1	2. ROVRAL AQUALFLO	0 DAT4	Forage	29.4	87.8	241
	151022-2	2. ROVRAL AQUALFLO	4 DAT4	Forage	18.6	85.8	131
	151022-3	1. Untreated Control	7 DAT4	Pods	<LOD	-	-
	151022-4	1. Untreated Control	7 DAT4	Forage	<LOD	86.5	<LOD
	151022-5	2. ROVRAL AQUALFLO	7 DAT4	Pods	0.48	-	-
	151022-6	2. ROVRAL AQUALFLO	7 DAT4	Forage	4.93	88.9	44.5
Trial 151023, Bowen, Queensland	151023-1	2. ROVRAL AQUALFLO	0 DAT4	Forage	11.4	84.8	74.8
	151023-2	2. ROVRAL AQUALFLO	4 DAT4	Forage	13.7	85.2	93.0
	151023-3	1. Untreated Control	7 DAT4	Pods	<LOD	--	-
	151023-4	1. Untreated Control	7 DAT4	Forage	<LOD	84.1	<LOD
	151023-5	2. ROVRAL AQUALFLO	7 DAT4	Pods	0.11	-	-
	151023-6	2. ROVRAL AQUALFLO	7 DAT4	Forage	2.71	84.0	16.9

LOD = Limit of Detection = 0.02 mg/kg
LOQ = Limit of Quantitation = 0.05 mg/kg
DAT4 = days after the fourth application of treatments

HIA/GLP/15/15 - DETERMINATION OF THE RESIDUES OF MALDISON IN CAPSICUMS AND CUCUMBERS - PROTECTED CROPPING

Study Phases		Dates
Study Commencement (Study Plan Signed)		18-May-16
Field Phase (First Application to Final Sample)	151025 Bargo, NSW Capsicum - PC	15-May-17 to 09-Jun-17
	151026 Virginia, SA Capsicum - PC	02-Jun-16 to 28-Jun-16
	151027 Kinkuna, Qld Cucumber - PC	20-Sep-17 to 15-Nov-17
	151028 Virginia, SA Cucumber - PC	12-Dec-16 to 06-Jan-17
Analytical Phase (First Sample Received to Analytical Report Signed)		14-Sep-16 to 04-Jan-18
Study Completion (Final Report Signed)		18-Jan-18
Permit Submission		22-Jan-18

In all trials, four applications of FYFANON 440EW INSECTICIDE (440 g/L maldison) were made at 295 mL/100 L (129.8 g a.i./100 L) at an interval of 6-8 days before harvest to capsicums and cucumbers grown in protected cropping structures. Fruit samples for residue analysis were taken 0, 1, 2, 3 and 4-5 days after the last application of the treatments.

Maldison residues in capsicum in protected cropping were 0.50-0.65, 0.20-0.46, 0.12-0.20, 0.060-0.13 and 0.025-0.062 mg/kg for fruit samples taken 0, 1, 2, 3 and 4-5 days after the last application of the treatments.

Maldison residues in cucumber in protected cropping were 0.041-0.16 mg/kg, <LOD, <LOD-0.019 mg/kg, <LOD and <LOD for fruit samples taken 0, 1, 2, 3 and 4-5 days after the last application of the treatments.

Recoveries of maldison were determined to be 86-150% and 98-116% for capsicum and cucumber respectively.

Summary of Results – Residues of Maldison in Capsicum and Cucumber in Protected Cropping Structures Following Applications of FYFANON 440EW INSECTICIDE

Trial Number and Location	Sample Number	Treatment	Sampling Interval	Substrate	Maldison (as received) (mg/kg)
Trial 151025 Bargo, NSW Capsicum - PC	151025-1	2. FYFANON	0 DAT4	Fruit	0.65
	151025-2	2. FYFANON	1 DAT4	Fruit	0.46
	151025-3	2. FYFANON	2 DAT4	Fruit	0.12
	151025-4	1. Untreated	3 DAT4	Fruit	<LOD
	151025-5	2. FYFANON	3 DAT4	Fruit	0.13
	151025-6	2. FYFANON	4 DAT4	Fruit	0.025*
Trial 151026 Virginia, SA Capsicum - PC	151026-1	2. FYFANON	0 DAT4	Fruit	0.50
	151026-2	2. FYFANON	1 DAT4	Fruit	0.20
	151026-3	2. FYFANON	2 DAT4	Fruit	0.20
	151026-4	1. Untreated	3 DAT4	Fruit	<LOD
	151026-5	2. FYFANON	3 DAT4	Fruit	0.060
	151026-6	2. FYFANON	5 DAT4	Fruit	0.062
Trial 151027 Kinkuna, Qld Cucumber - PC	151027-1	2. FYFANON	0 DAT4	Fruit	0.041*
	151027-2	2. FYFANON	1 DAT4	Fruit	<LOD
	151027-3	2. FYFANON	2 DAT4	Fruit	<LOD
	151027-4	1. Untreated	3 DAT4	Fruit	<LOD
	151027-5	2. FYFANON	3 DAT4	Fruit	<LOD
	151027-6	2. FYFANON	5 DAT4	Fruit	<LOD
Trial 151028 Virginia, SA Cucumber - PC	151028-1	2. FYFANON	0 DAT4	Fruit	0.16
	151028-2	2. FYFANON	1 DAT4	Fruit	<LOD
	151028-3	2. FYFANON	2 DAT4	Fruit	0.019*
	151028-4	1. Untreated	3 DAT4	Fruit	<LOD
	151028-5	2. FYFANON	3 DAT4	Fruit	<LOD
	151028-6	2. FYFANON	4 DAT4	Fruit	<LOD

Results marked with * are between LOD and LOQ, as the reported values are less than the LOQ, by definition, their accuracy and precision cannot be verified.
LOD = Limit of Detection = 0.01 mg/kg
LOQ = Limit of Quantitation = 0.05 mg/kg
DAT4 = days after treatment 4

HIA/GLP/15/16 - DETERMINATION OF THE RESIDUES OF PYRIPROXYFEN IN GREEN BEANS

Study Phases		**Dates**
Study Commencement (Study Plan Signed)		19-May-16
Field Phase (First Application to Final Sample)	151030 Bowen, Qld	19-May-16 to 16-Jun-16
	151031 Fernvale, Qld	28-Sep-16 to 26-Oct-16
Analytical Phase (First Sample Received to Analytical Report Signed)		05-Dec-16 to 02-Jun-17
Study Completion (Final Report Signed)		6-Jul-17
Permit Submission		7-Jul-17

In both trials, two applications of ADMIRAL ADVANCE INSECT GROWTH REGULATOR (100 g/L pyriproxyfen) were made to green beans at 500 mL/ha (50 g a.i./ha) at an interval of 14 days. Samples for residue analysis were taken 0 and 1 days after the last application with the final sample taken to coincide with normal commercial harvest.

Pyriproxyfen residues in green beans were 0.86-1.48 mg/kg for forage samples taken 0 and 1 days after the last application with 0.027-0.082 mg/kg detected in pod samples taken 1 day after the last application.

Recoveries of pyriproxyfen were determined to be 75-94% and 82-101% for forage and pods respectively.

Summary of Results – Residues of Pyriproxyfen in Green Beans Following Applications of ADMIRAL ADVANCE FUNGICIDE

Trial and Location	**Sample Number**	**Treatment**	**Sampling Interval from Application Number**	**Substrate**	**Pyriproxyfen (as received) (mg/kg)**	**% Moisture**	**Pyriproxyfen# (as dry basis) (mg/kg)**
Trial 151030 Bowen, Qld	151030-1	2. ADMIRAL ADVANCE	0 DALA	Forage	1.08	83.5	6.57
	151030-2	1. Untreated	1 DALA	Pods	<LOD	-	-
	151030-3	1. Untreated	1 DALA	Forage	<LOD	85.1	<LOD
	151030-4	2. ADMIRAL ADVANCE	1 DALA	Pods	0.027*	-	-
Trial 151031 Fernvale, Qld	151031-1	2. ADMIRAL ADVANCE	0 DALA	Forage	1.48	87.4	11.7
	151031-2	1. Untreated	1 DALA	Pods	<LOD	-	-
	151031-3	1. Untreated	1 DALA	Forage	<LOD	87.5	<LOD
	151031-4	2. ADMIRAL ADVANCE	1 DALA	Pods	0.082	-	-
	151031-5	2. ADMIRAL ADVANCE	1 DALA	Forage	0.91	87.3	7.15

LOD = Limit of Detection = 0.01 mg/kg
LOQ = Limit of Quantitation = 0.05 mg/kg
DALA = days after last application
Results marked with * are between LOD and LOQ, as the reported values are less than the LOQ, by definition, their accuracy and precision cannot be verified.
#Pyriproxyfen results for forage samples are corrected for the moisture content.

HIA/GLP/15/01 - DETERMINATION OF THE RESIDUES OF PHOSPHOROUS ACID IN PROCESSING TOMATO

Study Phases		**Dates**
Study Commencement (Study Plan Signed)		22-Jun-16
Field Phase (First Application to Final Sample)	160272, Echuca, Vic	21-Dec-16 to 14-Mar-17
	160273, Rochester, Vic	05-Dec-16 to 14-Mar-17
	160274, Colbinabbin, Vic	05-Dec-16 to 14-Mar-17
	160275, Lockington, Vic	21-Dec-16 to 23-Mar-17
Analytical Phase (First Sample Received to Analytical Report Signed)		24-Mar-17 to 07-Aug-17
Study Completion (Final Report Signed)		17-Aug-17
Permit Submission		29-Aug-17

In all trials, four applications of AGRI-FOS 600 SYSTEMIC FUNGICIDE (600 g/L phosphorous acid) were applied to processing tomatoes. A single application was applied 14-15 days after transplant at 1000 mL/ha (600 g a.i./ha) with three subsequent applications made at 3000 mL/ha (1800 g a.i./ha) 21-22, 10-11 and then 0 days before the first samples were taken. Samples for residue analysis were taken 0, 14 (commercial harvest), 21 and 27-28 days DALA. Low level residues of phosphorous acid (less than 2 mg/kg) were detected in untreated samples from trials 160272, 160273 and 160274. These low levels do not invalidate the residues found in the treated plots.

Residues in processing tomatoes ranged from 6.86-20.8 mg/kg, 11.1-16.3 mg/kg, 10.8-18.9 mg/kg and 7.32 to 18.8 mg/kg, 0, 14, 21 and 27-28 days after the last application respectively.

Recovery of phosphorous acid was determined to be between 79-106%.

Summary of Results – Residues of Phosphorous Acid in Processing Tomato Following Applications of AGRI-FOS 600 SYSTEMIC FUNGICIDE

Trial and Location	**Sample Number**	**Treatment**	**Sampling Interval from Application Number**	**Substrate**	**Phosphorous Acid (as received) (mg/kg)**
Trial 160272, Echuca, Victoria	160272-1	2. Phosphorous acid	0 DALA	Fruit	15.3
	160272-2	1. Untreated	14 DALA	Fruit	1.70^
	160272-3	2. Phosphorous acid	14 DALA	Fruit	16.3
	160272-4	2. Phosphorous acid	21 DALA	Fruit	18.9
	160272-5	2. Phosphorous acid	28 DALA	Fruit	18.8
Trial 160273, Rochester, Victoria	160273-1	2. Phosphorous acid	0 DALA	Fruit	6.86
	160273-2	1. Untreated	14 DALA	Fruit	0.56*^
	160273-3	2. Phosphorous acid	14 DALA	Fruit	11.6
	160273-4	2. Phosphorous acid	21 DALA	Fruit	12.3
	160273-5	2. Phosphorous acid	28 DALA	Fruit	7.32
Trial 160274, Colbinabbin, Victoria	160274-1	2. Phosphorous acid	0 DALA	Fruit	8.37
	160274-2	1. Untreated	14 DALA	Fruit	1.81^
	160274-3	2. Phosphorous acid	14 DALA	Fruit	11.1
	160274-4	2. Phosphorous acid	21 DALA	Fruit	10.8
	160274-5	2. Phosphorous acid	28 DALA	Fruit	16.2
Trial 160275, Lockington, Victoria	160275-1	2. Phosphorous acid	0 DALA	Fruit	20.8
	160275-2	1. Untreated	14 DALA	Fruit	<LOD
	160275-3	2. Phosphorous acid	14 DALA	Fruit	12.4
	160275-4	2. Phosphorous acid	20 DALA	Fruit	14.8
	160275-5	2. Phosphorous acid	27 DALA	Fruit	15.5

LOD = Limit of Detection = 0.5 mg/kg LOQ = Limit of Quantitation = 1 mg/kg

DALA = days after last application of treatments

*Results marked are between LOD and LOQ, as the reported values are less than the LOQ, by definition, their accuracy and precision cannot be verified.

HIA/GLP/15/05 - DETERMINATION OF RESIDUES OF IPRODIONE IN MANDARINS AND TANGELOS

Study Phases		**Dates**
Study Commencement (Study Plan Signed)		17-Jun-16
Field Phase (First Application to Final Sample)	160285, Sunlands, South Australia Mandarin	03-Nov-16 to 6-Jun-17
	160286, Red Cliffs, Victoria Mandarin	29-Sep-16 to 23-Jun-17
	160287, Sunlands, South Australia Tangelo	03-Nov-16 to 6-Jun-17
Analytical Phase (First Sample Received to Analytical Report Signed)		10-Jul-17 to 09-Nov-17
Study Completion (Final Report Signed)		23-Nov-17
Permit Submission		24-Nov-17

In all trials, three applications of ROVRAL AQUAFLO SYSTEMIC INSECTICIDE (500 g/L iprodione) were made at 100 mL/100 L (10 g a.i./100 L) in September/November 2016, January 2017 and April 2017 to mandarin and tangelo. Samples for residue analysis were taken at commercial harvest 56-57 days after the last application.

Residues in mandarin and tangelo were 0.48-1.04 mg/kg and 0.17 mg/kg respectively.

Recovery of iprodione was determined to be 64-94%.

Summary of Results – Residues of Iprodione in Mandarins and Tangelos Following Applications of ROVRAL AQUAFLO FUNGICIDE

Trial, Crop and Location	**Sample Number**	**Treatment**	**Sampling Interval from Application Number**	**Substrate**	**Iprodione (as received) (mg/kg)**
Trial 160285, Mandarin, Sunlands, South Australia	160285-1	1. Untreated	56 DALA	Fruit	<LOD
	160285-2	2. ROVRAL AQUAFLO	56 DALA	Fruit	0.48
Trial 160286, Mandarin, Red Cliffs Victoria	160286-1	1. Untreated	57 DALA	Fruit	<LOD
	160286-2	2. ROVRAL AQUAFLO	57 DALA	Fruit	1.04
Trial 160287, Tangelo, Sunlands, South Australia	160287-1	1. Untreated	56 DALA	Fruit	<LOD
	160287-2	2. ROVRAL AQUAFLO	56 DALA	Fruit	0.17

LOD = Limit of Detection = 0.005 mg/kg.
LOQ = Limit of Quantitation = 0.01 mg/kg.
DALA = days after last application

HIA/GLP/15/04 - DETERMINATION OF THE RESIDUES OF IMIDACLOPRID IN BLUEBERRIES

Study Phases		**Dates**
Study Commencement (Study Plan Signed)		22-Jun-16
Field Phase (First Application to Final Sample)	160282 Wallaville, Qld (2017)	24-Feb-17 to 01-Aug-17
	160283 Wallaville, Qld (2018)	20-Mar-18 to 27-Jun-18
Analytical Phase (First Sample Received to Analytical Report Signed)		22-Feb-17 to 26-Oct-18
Study Completion (Final Report Signed)		1-Nov-18
Permit Submission		7-Nov-18

In both trials, a single irrigation applied application of CONFIDOR GUARD SOIL INSECTICIDE (350 g/kg imidacloprid) was made to blueberries at 14 and 28 mL/100 m of row (4.9 and 9.8 g a.i./100 m of row respectively) just prior to or at first flower. Samples for residue analysis were taken at first harvest then 14 and 28 days later.

Residues of imidacloprid in blueberries were as follows:

Product	Product Rate per 100 m of row	First Harvest	14 DAFS	28 DAFS
CONFIDOR GUARD	14 mL	0.023-0.028	0.016-0.028	0.017-0.022
	28 mL	0.047-0.058	0.031-0.055	0.027-0.035

DAFS = days after first sample

Recovery of imidacloprid was determined to be 75-98%.

Summary of Results – Residues of imidacloprid in Blueberry Following Applications of CONFIDOR GUARD FUNGICIDE

Trial and Location (Year)	Sample Number	Treatment	Application Rate per 100 metre of row	Substrate Type	Sampling Timing (DAFS)	Imidacloprid (mg/kg)
Trial 160282 Wallaville, Qld (2017)	160282-1	2. CONFIDOR GUARD	14 mL	Fruit	First Harvest	0.023
	160282-2	3. CONFIDOR GUARD	28 mL	Fruit	First Harvest	0.058
	160282-3	2. CONFIDOR GUARD	14 mL	Fruit	14 DAFS	0.016
	160282-4	3. CONFIDOR GUARD	28 mL	Fruit	14 DAFS	0.031
	160282-5	1. Untreated	-	Fruit	28 DAFS	<LOD
	160282-6	2. CONFIDOR GUARD	14 mL	Fruit	28 DAFS	0.017
	160282-7	3. CONFIDOR GUARD	28 mL	Fruit	28 DAFS	0.027
Trial 160283 Wallaville, Qld (2018)	160282a-1	2. CONFIDOR GUARD	14 mL	Fruit	First Harvest	0.028
	160282a-2	3. CONFIDOR GUARD	28 mL	Fruit	First Harvest	0.047
	160282a-3	2. CONFIDOR GUARD	14 mL	Fruit	14 DAFS	0.028
	160282a-4	3. CONFIDOR GUARD	28 mL	Fruit	14 DAFS	0.055
	160282a-5	1. Untreated	-	Fruit	28 DAFS	<LOD
	160282a-6	2. CONFIDOR GUARD	14 mL	Fruit	28 DAFS	0.022
	160282a-7	3. CONFIDOR GUARD	28 mL	Fruit	28 DAFS	0.035

DAFS = days after first sample
LOD = Limit of Detection = 0.003 mg/kg
LOQ = Limit of Quantitation = 0.01 mg/kg

HIA/GLP/15/02 - DETERMINATION OF THE RESIDUES OF CYPRODINIL AND FLUDIOXONIL IN BLUEBERRIES

Study Phases		Dates
Study Commencement (Study Plan Signed)		22-Jun-16
Field Phase (First Application to Final Sample)	160277, Warnervale, NSW	18-Oct-16 to 15-Nov-16
	160278, Wallaville, Qld	12-Oct-16 to 10-Nov-16
Analytical Phase (First Sample Received to Analytical Report Signed)		20-Feb-17 to 30-Mar-17
Study Completion (Final Report Signed)		3-Jul-17
Permit Submission		7-Jul-17

In both trials, four applications of SWITCH FUNGICIDE (375 g/kg cyprodinil and 250 g/kg fludioxonil) were made to blueberries at 1.0 kg/ha (375 and 250 g/ha respectively) at an interval of 7-8 days. Samples for residue analysis were taken 7 days after the last application, at normal commercial harvest.

Residues in blueberries were 0.42-0.81 mg/kg for cyprodinil and 0.71-1.56 mg/kg for fludioxonil for samples taken 7 days after the last application.

Recoveries of cyprodinil and fludioxonil were determined to be 97-108% and 79-110% respectively.

Summary of Results - Residues of Cyprodinil and Fludioxonil in Blueberry Following Applications of SWITCH FUNGICIDE

Trial and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Cyprodinil (as received) (mg/kg)	Fludioxonil (as received) (mg/kg)
Trial 160277 Warnervale, NSW	160277-1	1. Untreated	7 DALA	Fruit	<LOD	<LOD
	160277-2	2. SWITCH	7 DALA	Fruit	0.81	0.71
Trial 160278 Wallaville, Qld	160278-1	1. Untreated	7 DALA	Fruit	<LOD	<LOD
	160278-2	2. SWITCH	7 DALA	Fruit	0.42	1.56

HIA/GLP/15/03 - DETERMINATION OF THE RESIDUES OF ABAMECTIN IN BLUEBERRIES

Study Phases		Dates
Study Commencement (Study Plan Signed)		22-Jun-16
Field Phase (First Application to Final Sample)	160280, Wallaville, Qld	26-Jul-17 to 24-Aug-17
Analytical Phase (First Sample Received to Analytical Report Signed)		28-Sep-17 to 30-Nov-17
Study Completion (Final Report Signed)		22-Dec-17
Permit Submission		3-Jan-18

Four applications of VERTIMEC MITICIDE/INSECTICIDE (18 g/L abamectin) were made to blueberries at 25 mL/100 L (0.45 g/100 L) at an interval of 7-8 days. Samples for residue analysis were taken 7 days after the last application at normal commercial harvest.

Residues in blueberries were 0.005 mg/kg for abamectin for samples taken 7 days after the last application.

Recovery of abamectin was determined to be 71-93%.

Summary of Results – Residues of abamectin Blueberry Following Applications of VERTIMEC MITICIDE/INSECTICIDE

Trial and Location	Sample Number	Treatment	Sampling Interval from Application Number	Substrate	Total Abamectin (as received) (mg/kg)
Trial 160280 Wallaville, Qld	160280-1	1. Untreated	7 DALA	Fruit	<LOD
	160280-2	2. VERTIMEC	7 DALA	Fruit	0.005*

Total Abamectin = Abamectin B1a + Abamectin B1b
LOD = Limit of Detection = 0.003 mg/kg
LOQ = Limit of Quantitation = 0.01 mg/kg
DALA = days after last application
Results marked with * are between LOD and LOQ, as the reported values are less than the LOQ, by definition, their accuracy and precision cannot be verified.

Outputs

Nineteen study plans were prepared for this project.

For each study a separate GLP compliant final report was completed covering both the field and analytical phases. These were prepared as per the table below:

Study Number	Report Title	Date Report Signed
HIA/GLP/15/17	Determination of the Residues of Ethephon in Bananas - Australia, 2017	14-Feb-18
HIA/GLP/15/18	Determination of the Residues of Clothianidin in Olives - Australia, 2017	03-Aug-18
HIA/GLP/15/19	Determination of the Residues of Metiram and Pyraclostrobin in Olives - Australia 2018	03-Aug-18
HIA/GLP/15/20	Determination of the Residues of Beta-Cyfluthrin in Papaya - Australia, 2016	19-Apr-17
HIA/GLP/15/06	Determination of the Residues of Azoxystrobin in Rubus Species - Australia 2016/2017	20-Jul-17
HIA/GLP/15/07	Determination of the Residues of Bifenthrin in Rubus Species - Australia 2016/2017	21-Jul-17
HIA/GLP/15/08	Determination of the Residues of Metalaxyl and Mancozeb in Rubus Species – Australia 2016/2017	21-Jul-17
HIA/GLP/15/09	Determination of the Residues of Alpha-Cypermethrin in Summerfruit - Australia 2017	17-Aug-17
HIA/GLP/15/10	Determination of the Residues of Fosetyl-Aluminium in Plums - Australia 2017	27-Sep-17
HIA/GLP/15/12	Determination of the Residues of Etoxazole in Snow Peas - Protected Cropping - Australia 2017	13-Dec-17
HIA/GLP/15/13	Determination of the Residues of Hexythiazox in Snow Peas and Sugar Snap Peas - Field and Protected Cropping - Australia 2017	10-Jan-18
HIA/GLP/15/14	Determination of the Residues of Iprodione in Carrots and Green Beans - Australia 2016	19-Jul-17
HIA/GLP/15/15	Determination of the Residues of Maldison in Capsicums and Cucumbers - Protected Cropping - Australia 2017	18-Jan-18
HIA/GLP/15/16	Determination of the Residues of Pyriproxyfen in Green Beans - Australia 2017	6-Jul-17
HIA/GLP/15/01	Determination of the Residues of Phosphorous Acid in Processing Tomato - Australia 2016/2017	17-Aug-17
HIA/GLP/15/05	Determination of Residues of Iprodione in Mandarins and Tangelos - Australia 2017	23-Nov-17
HIA/GLP/15/04	Determination of the Residues of Imidacloprid in Blueberries - Australia 2018	1-Nov-18
HIA/GLP/15/03	Determination of the Residues of Abamectin in Blueberries - Australia 2017	3-Jul-17
HIA/GLP/15/02	Determination of the Residues of Cyprodinil and Fludioxonil in Blueberries	22-Dec-17

The following permit renewal applications have been submitted to the APVMA with residue data generated from this project:

Original Permit Number	Description	Number of Residue Trials Submitted with Application	Renewal Request Sent to APVMA	Application Number	APVMA Application Status
PER14966	Ethephon / Bananas / Crop Timing Management	8	15-Feb-18	DC21-56628492 #114778	Completed 28-Aug-18 Permit Issued PER14966 V3
PER14897	Clothianidin / Olives / Olive Lace Bug	2	28-Aug-17	DC21-78703489 #112322	Completed 31-Mar-18 Permit Issued PER14897 V2
PER14908	Metiram + Pyraclostrobin / Olives / Anthracnose	2	30-Oct-18	DC21-90772149 #118118	Pending with the APVMA. Expected completion 7-May-19
PER13671	Beta-Cyfluthrin / Papaya / Fruit-Spotting Bug and Banana-Spotting Bug	2	14-Jul-17	DC21-00456649 #111797	Completed 8-Feb-18 Permit Issued PER13671 V3
PER14509	Azoxystrobin / Rubus spp. / Anthracnose, Botrytis and Cladosporium	4	21-Jul-17	DC21-53097335 #111939	Completed 16-Feb-18 Permit Issued PER84970
PER14448	Bifenthrin / Rubus spp. / Elephant Weevil, Monolepta Beetles and Plague Thrips	4	21-Jul-17	DC21-31586399 #111946	Completed 12-Feb-18 Permit Issued PER84972
PER14238	Metalaxyl + Mancozeb / Rubus and Rubus Hybrids/ Downy Mildew	4	21-Jul-17	DC21-78367562 #111947	Completed 16-Feb-18 Permit Issued PER84973
PER14875	Alpha-Cypermethrin / Stone Fruit / Fruit Fly	3	29-Aug-17	DC21-47841075 #112333	Completed 22-Mar-18 Permit Issued PER14875 V3
PER14124	Fosetyl Present as the Aluminium Salt / Apricot, Peach, Nectarine and Plum / Phytophthora Trunk and Collar Rot	4	27-Sep-17	DC21-00891097 #112802	Completed 24-Apr-18 Permit Issued PER85273
PER13899 V2	Etoxazole / Snow or Sugar Snap Peas / Two Spotted Mite	2	15-Dec-17	DC21-50708275 #113744	Completed 9-Jul-18 Permit Issued PER82460 V2
PER14765	Hexythiazox / Snow and Sugar Snap Peas / Tomato Spider Mite, Two Spotted Mite, Broad Mite and Tomato Russet Mite	2	20-Feb-18	DC21-12768097 #114842	Completed 18-Sep-18 Permit Issued PER14765 V4

Original Permit Number	Description	Number of Residue Trials Submitted with Application	Renewal Request Sent to APVMA	Application Number	APVMA Application Status
PER12567	Iprodione / Green Beans and Carrots / Sclerotinia, Black Rot and Grey Mould	4	19-Jul-17	DC21-43462588 #111891	Completed 12-Feb-18 Permit Issued PER84955
PER13031	Maldison / Capsicums and Cucumbers / Fruit Fly	4	22-Jan-18	DC21-39609760 #114079	Completed 12-Sep-18 Permit Issued PER13031 V5
PER14701	Pyriproxyfen / Beans / Silverleaf Whitefly	2	7-Jul-18	DC21-92509494 #111703	Completed 15-May-18 Permit Issued PER84890
PER11483	Phosphorous Acid / Processing Tomatoes / Phytophthora Root Rot	4	29-Aug-17	DC21-47841075 #112333	Completed 6-Feb-18 Permit Issued PER85127
PER14772	Iprodione / Mandarins and Tangelos / Emperor Brown Spot	3	24-Nov-17	DC21-38740994 #113490	Completed 12-Jun-18 Permit Issued PER14772 V3
PER12534	Imidacloprid / Blueberry / Scarab Beetle Larvae	2	7-Nov-18	DC21-91356598	Pending with the APVMA
PER13630	Cyprodinil + Fludioxonil / Blueberry / Grey Mould and Anthracnose	2	7-Jul-17	DC21-75309765 #111704	Completed 29-Jan-18 Permit Issued PER84891
PER14423	Abamectin / Blueberry / Fruit Fly	1	3-Jan-18	DC21-53283199 #113885	Completed 20-Jul-18 Permit Issued PER14423 V3

Outcomes

The outcomes for this project are the nineteen GLP residue reports used to support the nineteen permit applications which were prepared for submission to the APVMA for permit renewals to ensure on-going access to the permits and to either establish MRLs or support the currently established tMRLs. Of the nineteen permit applications submitted to date, seventeen permits have been successfully extended by the APVMA and two permits are currently pending approval.

The GLP residue data generated in these studies supported the currently established temporary MRLs (tMRLs) and harvest with-holding periods (WHP) for all permits. The exceptions being:

PER14897 V2 - Clothianidin / Olives / Olive Lace Bug - The GLP residue data supported a reduction in the tMRL to 0.3 mg/kg for the new permit.

PER14875 V3 - Alpha-Cypermethrin / Stone Fruit / Fruit Fly – The GLP residue data supported a reduced WHP of 7 days for the new permit.

PER82460 V2 - Etoxazole / Snow or Sugar Snap Peas / Two Spotted Mite - The GLP residue data supported the addition of a grazing WHP of 14 days. Use in protected cropping situations prohibited.

PER14765 V4 - Hexythiazox / Snow and Sugar Snap Peas / Tomato Spider Mite, Two Spotted Mite, Broad Mite, Tomato Russet Mite - The GLP residue data supported the addition of a grazing WHP of 14 days for the new permit.

PER84955 - Iprodione / Green Beans and Carrots / Sclerotinia, Black Rot and Grey Mould - The GLP residue data supported the current tMRL and WHP however grazing of crops or stubble treated with iprodione prohibited.

PER84890 - Pyriproxyfen / Beans / Silverleaf Whitefly - The GLP residue data supported the current tMRL and WHP however grazing of crops or stubble treated with pyriproxyfen prohibited.

Monitoring and evaluation

Not applicable

Recommendations

None to report

References

None to report

Intellectual property, commercialisation and confidentiality

No project IP, project outputs, commercialisation or confidentiality issues to report

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Appendices

No appendices attached