



PERMIT TO ALLOW MINOR USE OF AN AGVET CHEMICAL PRODUCT

**TO CONTROL VARIOUS INSECT PESTS IN (NON-FOOD) NURSERY STOCK,
INCLUDING SEEDLINGS, PLUGS, POTTED COLOUR, TREES, SHRUBS,
FOLIAGE PLANTS, PALMS, GRASSES, FRUIT TREES AND ORNAMENTALS**

PERMIT NUMBER – PER81707

This permit is issued to the Permit Holder in response to an application granted by the APVMA under section 112 of the Agvet Codes of the jurisdictions set out below. This permit allows a person, as stipulated below, to use the product in the manner specified in this permit in the designated jurisdictions. This permit also allows any person to claim that the product can be used in the manner specified in this permit.

THIS PERMIT IS IN FORCE FROM 30 SEPTEMBER 2015 TO 30 SEPTEMBER 2020

Permit Holder:

NURSERY AND GARDEN INDUSTRY AUSTRALIA LTD
c/- AGAWARE CONSULTING PTY LTD
21 Rosella Avenue
STRATHFIELDSAYE VIC 3551

Persons who can use the product under this permit:

Persons generally.

CONDITIONS OF USE (for all users of this permit)

Persons using insecticide products must refer to the *Application Rates* and *Critical Use Conditions* listed in the following Tables:

Insect Classification Order

Table 1. Acarina (pages 6 – 7)

Including: Mites

Table 2. Coleoptera (pages 8 – 9)

Including: Grasshoppers, Locusts, Scarab beetles, Weevils

Table 3. Dermaptera (page 10)

Including: Earwigs

Table 4. Diptera (pages 11 – 12)

Including: Fungus gnats, Sciarid flies

Table 5. Hemiptera (pages 13 – 22)

Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Psyllids, Whiteflies

Table 6. Hymenoptera (page 23)

Including: Ants

Table 7. Isoptera (page 24)

Including: Termites

Table 8. Lepidoptera (pages 25 – 28)

Including: Cabbage white butterfly, Cluster caterpillar, Cutworms, Diamondback moth, Heliothis (*Helicoverpa* species), Lightbrown apple moth, Loopers, Wireworms

Table 9. Symphyla (page 29)

Including: Symphylids

Table 10. Thysanoptera (pages 30 – 33)

Including: Thrips

Reference may also be made under *Critical Use Conditions* to additional notes relating to *Safety Directions* and the wearing of appropriate *Personal Protective Equipment (PPE)*, and to the *Re-entry Period* following spray application. These notes are an important part of the *Critical Use Conditions*.

Withholding Period:

NOT required when used as directed

Jurisdiction:

ACT, NSW, QLD, SA, TAS, NT & WA

Note: Victoria is not included in this permit, as their *Control-of-Use* legislation means a permit is not required to legalise this off-label use in that state.

Additional Conditions:

This PERMIT provides for the use of a product in a manner other than specified on the approved label of the product. Unless otherwise stated in this permit, the use of the product must be in accordance with instructions on its label.

PERSONS who wish to prepare for use and/or use products for the purposes specified in this permit must read, or have read to them, the DETAILS and CONDITIONS of this permit.

To Avoid Crop Damage:

Nursery stock is not known to be sensitive to the chemical insecticide products listed in this permit when used in strict accordance with the rate, conditions of use and other warnings. However, the large number of disparate crop lines produced in commercial nurseries means that not all these products have been fully evaluated for crop safety on all species, or in all situations where treatment may be undertaken. Some of these insecticides may demonstrate toxicity under certain situations, application methods, application rates and weather conditions to susceptible nursery stock. Some insecticides may also leave undesirable spray residue on foliage and flowers.

Users **must** treat a sample number of plants or a small area prior to whole crop treatment and monitor any phytotoxic effects that will compromise production goals. This action cannot guarantee crop safety as application, environmental and crop conditions may vary from test treatment to whole of crop treatment. Any instances of phytotoxic damage should be reported immediately to the permit holder.

Further reference to specific known issues may also be made under *Critical Use Conditions* to additional notes relating to *Crop Safety* and a potential risk of phytotoxicity. These notes are an important part of the *Critical Use Conditions*.

Resistance Management

Use insecticide products in accordance with existing *Insecticide Resistance Management Strategies* and in accordance with best practice. Insecticide products should be used as part of an integrated pest management program, which incorporates as many control options as possible to minimise infestation pressure.

Insecticide Resistance Management Strategies have been developed by CropLife Australia. An updated version of these strategies is available from CropLife Australia's website at: <http://www.croplife.org.au/industry-stewardship/resistance-management> or search on-line for *Resistance Management CropLife Australia*.

Issued by the Australian Pesticides and Veterinary Medicines Authority

Notes:

25/02/2016. Additional insecticide uses included in consolidation: 12659 (pyriproxyfen), 12983 (fipronil), 13329 (petroleum oil), 14623 (Bt), 14769 (buprofezin), 14879 (emamectin), 14881 (pyrethrins), 80241 (diafenthiuron, bifentazate & pymetrozine), 81311 (etoxazole), 81466 (fenoxycarb) and 81519 (acephate). Issued as version 2.

19/01/2017 Version 3: Administrative correction, Movento rate corrected from 200 – 400 mL/100L to 20-40 mL/100L

CONDITIONS OF USE

Products to be used:

Acephate

LANCER 750 SP INSECTICIDE

Plus other registered products

Containing: 750 g/kg acephate as the only active constituent.

ORTHENE XTRA INSECTICIDE

Plus other registered products

Containing: 970 g/kg acephate as the only active constituent

Alpha-cypermethrin

CROP CARE DOMINEX DUO INSECTICIDE

Plus other registered products

Containing: 100 g/L alpha-cypermethrin as their only active constituent.

CONQUEST ALPHA FORTE 250 SC INSECTICIDE

Plus other registered products

Containing: 250 g/L alpha-cypermethrin as their only active constituent.

Bacillus Thuringiensis

VECTOBAC WG BIOLOGICAL LARVICIDE

Containing: *Bacillus thuringiensis* subsp. *israelensis* serotype H14 as the only active constituent.

Bifenazate

ACRAMITE MITICIDE

Plus other registered products

Containing: 480 g/L bifenazate as the only active constituent.

Buprofezin

APPLAUD INSECTICIDE

Plus other registered products

containing: 440 g/L buprofezin as their only active constituent.

Chlorantraniliprole

DUPONT CORAGEN INSECTICIDE

Plus other registered products

Containing: 200 g/L chlorantraniliprole as its only active constituent.

Chlorantraniliprole & Thiamethoxam

DURIVO INSECTICIDE

Plus other registered products

Containing: 100 g/L chlorantraniliprole and 200 g/L thiamethoxam as their only active constituent.

Diafenthiuron

PEGASUS MITICIDE/INSECTICIDE

HIGRAN TURF MITICIDE

Containing: 500 g/L diafenthiuron as the only active constituent.

Emamectin

PROCLAIM INSECTICIDE

Containing: 44 g/kg emamectin present as emamectin benzoate as their only active constituent.

Etoxazole

PARAMITE SELECTIVE MITICIDE

Containing: 110 g/L etoxazole as its only active constituent

Fenoxycarb

INSEGAR WG INSECT GROWTH REGULATOR

Plus other registered products

Containing: 250 g/kg fenoxycarb as their only active constituent.

Fipronil

NUFARM REGENT 200SC INSECTICIDE

Plus other registered products

Containing: 200 g/L fipronil as their only active constituent.

INSTAR GRANULAR INSECTICIDE

Plus other registered products

Containing: 0.25 g/kg fipronil as their only active constituent.

Imidacloprid

CONFIDOR 200 SC INSECTICIDE

Plus other registered products

Containing: 200 g/L imidacloprid as their only active constituent.

SUSCON MAXI SOIL INSECTICIDE

SUSCON MAXI INTEL SOIL INSECTICIDE

Containing: 50 g/kg imidacloprid as its only active constituent.

Indoxacarb

DUPONT AVATAR INSECTICIDE

Plus other registered products

Containing: 300 g/kg indoxacarb as its only active constituent.

Petroleum oil

CALTEX SUMMER SPRAY OIL

PESTOIL INSECT CONTROL SPRAY

DAVID GRAYS WHITE OIL

Containing: 839 g/L petroleum oil as the only active constituent.

SACOA SUMMER INSECTICIDAL SPRAY OIL

Containing: 844 g/L petroleum oil as the only active constituent.

Pymetrozine

CHESS INSECTICIDE

Plus other registered products

Containing: 500 g/kg pymetrozine as the only active constituent.

Pyrethrins

PYGANIC ORGANIC INSECTICIDE

Containing: 13 g/L pyrethrins as the only active constituent.

Pyriproxyfen

ADMIRAL INSECT GROWTH REGULATOR INSECTICIDE

Containing: 100 g/L pyriproxyfen as their only active constituent.

Spirotetramat

MOVENTO 240 SC INSECTICIDE

Containing: 240 g/L spirotetramat as its only active constituent.

DIRECTIONS FOR USE:

Table 1. Acarina (Including: Mites)

Pest	Product (MoA)	Rate	Critical Use Comments
Mites (Suppression only)	<i>Proclaim Insecticide</i> 44 g/kg emamectin (6)	250 – 300 g/ha OR 25 – 30 g/100 L	<ul style="list-style-type: none"> ▪ For optimum performance, apply cover spray immediately following egg hatch and/or presence of early nymphal stages. ▪ Thorough coverage of foliage is essential for optimum performance. ▪ Use the lower rate on low to moderate infestations. Use higher rate under heavier infestation pressure, or during periods of hot weather. ▪ DO NOT apply more than two (2) applications per crop, with a minimum re-treatment interval of 7 days between applications. ▪ DO NOT apply more than four (4) spray applications of <i>Proclaim</i> within an annual nursery production cycle. ▪ Suppression only is likely to be achieved. An alternative approved (registered/permit) miticide treatment may be a better option. ▪ Dangerous to bees. DO NOT spray any plants in flower while bees are foraging. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the <i>Proclaim</i> label. ▪ DO NOT apply spray if rainfall is imminent, or spray conditions are unfavourable.
Spider mites: Twospotted (red spider) mite Strawberry (banana) spider mite Bean spider mite Oriental spider mite European red mite	<i>Paramite Selective Miticide</i> 100 g/L etoxazole (10B)	35 mL / 100 L OR 350 mL / ha	<ul style="list-style-type: none"> ▪ Apply at first sign of mite infestation before damage occurs. ▪ DO NOT apply more than one (1) cover spray per year to avoid resistance development. ▪ DO NOT apply excessive spray volume to plants. ▪ Water rates may need to increase as crop size increases. Mature crops may require 1,000-2,000 L/ha and the rate per 100 L should be used. Apply to the point of run-off only. ▪ Concentrate spray is not recommended. ▪ DO NOT apply if rainfall is expected before spray is dry.

Table 1 cont. Acarina (Including: Mites)

Pest	Product (MoA)	Rate	Critical Use Comments
Mites	<p><i>Caltex Summer Spray Oil</i> 839 g/L petroleum oil</p> <p><i>Sacoa Summer Insecticidal Spray Oil</i> 844 g/L petroleum oil</p>	1 - 2 L product / 100 L	<ul style="list-style-type: none"> ▪ Apply a maximum of six (6) sprays with a 7-14 day re-treatment interval. ▪ Apply as foliar spray using airblast sprayer or boom sprayer. ▪ Apply in sufficient water to ensure complete and thorough coverage of foliage and/or crop. <p><u>Plant Phytotoxicity</u></p> <ul style="list-style-type: none"> ▪ Petroleum oil products have demonstrated phytotoxicity and undesirable commercial effects in nursery plant species. <i>Refer Note 5.</i> ▪ Users need to maintain <i>Records</i> for use of this product. <i>Refer Note 6.</i>
Mites	<p><i>Pegasus Miticide/Insecticide</i> 500 g/L diafenthiuron (12A)</p>	60 – 80 mL product / 100 L	<ul style="list-style-type: none"> ▪ Apply at first sign of mite infestation before damage occurs. ▪ Apply maximum two (2) applications within annual production cycle. ▪ Apply using knapsack sprayer, or airblast or boom sprayer to the point of runoff, ensuring complete coverage. Spray in sufficient volume to provide adequate penetration and coverage, without excessive run-off onto ground. ▪ Monitor regularly for reinfestation and respray if necessary using an alternate product from different chemical Mode of Action (MoA) group.
Twospotted mite	<p><i>Acramite Miticide</i> 480 g/L bifenazate (unknown)</p>	65 mL product / 100 L	<ul style="list-style-type: none"> ▪ DO NOT apply sequential applications of insecticide products from any one chemical group. ▪ Preferably products with the same chemical MoA group should not be used more than twice in a growing season. ▪ <i>Safety Directions</i> (in additional to label) must be adhered to when using this miticide product. <i>Refer Note 7.</i> ▪ Observe Re-entry Period for treated areas. <i>Refer Note 8.</i> ▪ DO NOT allow stock to graze treated plant material. Any treated plant material discarded (refuse) should be properly disposed of to prevent access by livestock.

Table 2. Coleoptera (Including: Grasshoppers, Locusts, Scarab beetles, Weevils)

Pest	Product (MoA)	Rate	Critical Use Comments
Weevils	<i>Dupont Avatar Insecticide</i> 300 g/kg indoxacarb (22A)	170 g product / ha OR 17 g product /100 L water	<ul style="list-style-type: none"> ▪ Apply spray treatment when damage is observed. Continue monitoring populations levels and repeat treatment if further damage is likely to occur. DO NOT retreat within 10 days. ▪ Apply maximum three (3) foliar spray applications within an annual production cycle. ▪ Thorough coverage of foliage is essential: apply diluent to the point of run-off. ▪ Use in accordance with existing IPM strategy and in accordance with best practice. ▪ Add a non-ionic surfactant (<i>Refer Note 1</i>) at specified label rates. Refer to label directions for mixing and surfactant/wetting agent.
Grasshoppers Locusts	<i>Crop Care Dominex Duo Insecticide</i> 100 g/L alpha-cypermethrin (3A) <i>Conquest Alpha Forte 250 SC Insecticide</i> 250 g/L alpha-cypermethrin (3A)	<u>100 g/L product</u> 160 - 200 mL product / ha <u>250 g/L product</u> 64 - 80 mL product / ha	<ul style="list-style-type: none"> ▪ Apply at the first sign of the pests using ground boom spray application equipment only. ▪ DO NOT apply using backpack spraying equipment. ▪ Use a non-ionic wetting agent at the rate specified by the manufacturer for use in horticultural crops. ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. <p><u>Re-entry or Re-handling</u></p> <ul style="list-style-type: none"> ▪ Do not enter treated areas for 24 hours after applying the product to control grasshoppers/locusts, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

Table 2 cont. Coleoptera (Including: Grasshoppers, Locusts, Scarab beetles, Weevils)

Pest	Product (MoA)	Rate	Critical Use Comments
Scarab beetle larvae	<i>Suscon Maxi Soil Insecticide</i> 50 g/kg imidacloprid (4A)	<u>Small cell trays</u> (5 L capacity) 830 g/m ³ potting media <u>Medium pots</u> (5.1 – 100 L capacity) 415 g /m ³ potting media <u>Large containers</u> (101 – 1,000 L capacity) 208 g/m ³ potting media	<ul style="list-style-type: none"> ▪ Mix the required amount of <i>Suscon</i> product per cubic metre of potting media for the container category being used. ▪ Mix thoroughly before filling pots/tubes and transplanting. Irrigate moderately after potting to activate the insecticide. ▪ DO NOT allow significant leaching and run-off at least three (3) irrigations or 10 days, whichever is longer. ▪ Observe additional <i>Safety Directions</i> for use of imidacloprid based soil treatment products in nursery situations (<i>Refer Note 2</i>).
Scarab beetle larvae Sugar cane weevil borer	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100 L water and drenching potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 3. Demaptera (Including: Earwigs)

Pest	Product (MoA)	Rate	Critical Use Comments
European earwig	<i>Dupont Avatar Insecticide</i> 300 g/kg indoxacarb (22A)	170 g product / ha OR 17 g product /100 L water	<ul style="list-style-type: none"> ▪ Apply spray treatment when damage is observed. Continue monitoring populations levels and repeat treatment if further damage is likely to occur. DO NOT retreat within 10 days. ▪ Apply maximum three (3) foliar spray applications within an annual production cycle. ▪ Thorough coverage of foliage is essential: apply diluent to the point of run-off. ▪ Use in accordance with existing IPM strategy and in accordance with best practice. ▪ Add a non-ionic surfactant (<i>Refer Note 1</i>) at specified label rates. Refer to label directions for mixing and surfactant/wetting agent.
	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100 L water and drenching potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and for maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 4. Dipetria (Including: Fungus gnats, Sciarid flies)

Pest	Product (MoA)	Rate	Critical Use Comments
Fungus gnats	<i>Suscon Maxi Soil Insecticide</i> 50 g/kg imidacloprid (4A)	<u>Small cell trays</u> (5 L capacity) 830 g/m ³ potting media <u>Medium pots</u> (5.1 – 100 L capacity) 415 g /m ³ potting media <u>Large containers</u> (101 – 1,000 L capacity) 208 g/m ³ potting media	<ul style="list-style-type: none"> ▪ Mix the required amount of <i>Suscon</i> product per cubic metre of potting media for the container category being used. ▪ Mix thoroughly before filling pots/tubes and transplanting. Irrigate moderately after potting to activate the insecticide. ▪ DO NOT allow significant leaching and run-off at least three (3) irrigations or 10 days, whichever is longer. ▪ Observe additional <i>Safety Directions</i> for use of imidacloprid based soil treatment products in nursery situations (<i>Refer Note 2</i>).
	<i>Vectobac WG Biological Larvicide</i> <i>Bacillus thuringiensis</i> subsp. <i>israelensis</i> serotype h14 (11)	Ornamentals Including potted plants 100 – 200 g product / 100 L	<ul style="list-style-type: none"> ▪ <i>VectoBac</i> is a larvicide and will not control adult gnats. Application must be timed for stage of development when larvae are present in the soil. ▪ Apply by soil drench or spray application to sufficiently wet the soil or growing media to a depth of 3-4 cm or deeper if gnats are present. Re-apply as needed. ▪ For existing infestations, make 3 weekly applications at the higher rate. Apply regular follow-up applications with the lower rate to establish a long term maintenance program.
	<i>Admiral Insect Growth Regulator Insecticide</i> 100 g/L pyriproxyfen (7C)	15 mL product / 100 L	<ul style="list-style-type: none"> ▪ Use as a drench to pots saturating the top 2 - 4 cm of soil. ▪ Apply 25 mL of solution to soil surface of 15 cm pot. ▪ Adjust volume accordingly for smaller or larger pots. ▪ DO NOT drench plants more than one time per crop cycle.

Table 4 cont. Dipetria (Including: Fungus gnats, Sciarid flies)

Pest	Product (MoA)	Rate	Critical Use Comments
Fungus gnats Sciarid flies	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100 L water and drenching potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 5. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Leafhoppers Mealybugs Scale insects	<i>Applaud Insecticide</i> 440 g/L buprofezin (16)	30 – 60 mL product / 100 L	<ul style="list-style-type: none"> ▪ DO NOT use more than two (2) applications of buprofezin in an annual production cycle. ▪ Monitor nursery stock and apply when nymph stages exceed threshold levels and are prevalent. ▪ DO NOT re-apply spray within 14 days after initial application, and only spray when nymph stages exceed threshold levels. ▪ Spray in sufficient volume to provide adequate penetration and coverage of foliage. <p><i>Protection of Livestock:</i> DO NOT allow stock to graze treated plant material. Any treated plant material discarded (refuse) should be properly disposed of to prevent access by livestock.</p>
Greenhouse whitefly Silverleaf whitefly			<ul style="list-style-type: none"> ▪ DO NOT use more than two (2) applications of buprofezin in an annual production cycle. ▪ Application should be aimed at the early nymph stages. ▪ Apply 7 to 10 days after the first appearance of adult whiteflies on foliage, or monitor populations and apply based on the numbers of nymphs observed. ▪ DO NOT re-apply consecutive sprays; rotate with product from a different chemical group. ▪ Spray in sufficient volume to provide adequate penetration and coverage of foliage; particularly the underside of leaf area, as nymphs (and adults) are predominantly on the underside of leaves. <p><i>Protection of Livestock:</i> DO NOT allow stock to graze treated plant material. Any treated plant material discarded (refuse) should be properly disposed of to prevent access by livestock.</p>

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Aphids Lace bugs Leafhoppers Mealybugs Psyllids Scale insects Greenhouse whitefly Silverleaf whitefly	<i>Suscon Maxi Soil Insecticide</i> 50 g/kg imidacloprid (4A)	Small cell trays (5 L capacity) 830 g/m ³ potting media Medium pots (5.1 – 100 L capacity) 415 g /m ³ potting media Large containers (101 – 1,000 L capacity) 208 g/m ³ potting media	<ul style="list-style-type: none"> ▪ Mix the required amount of Suscon product per cubic metre of potting media for the container category being used. ▪ Mix thoroughly before filling pots/tubes and transplanting. Irrigate moderately after potting to activate the insecticide. ▪ DO NOT allow significant leaching and run-off at least three (3) irrigations or 10 days, whichever is longer. ▪ Observe additional <i>Safety Directions</i> for use of imidacloprid based soil treatment products in nursery situations (<i>Refer Note 2</i>).
Aphids Leafhoppers Whiteflies	<i>Durivo Insecticide</i> 100 g/L chlorantraniliprole (28) plus 200 g/L thiamethoxam (4A)	15 – 50 mL product / 1000 seedlings	<ul style="list-style-type: none"> ▪ Apply one (1) soil application only per crop cycle. ▪ Apply in sufficient water volume to ensure uniform application and incorporation into seedling root zone. ▪ Use lower rates when treating crops and varieties with growing seasons of less than 7 weeks. Use higher rates when seasonal conditions favour rapid crop development, or high pest pressure is anticipated ▪ Following use of <i>Durivo</i>, rotate to alternative mode of action insecticide group. DO NOT apply any further applications of Group 4A insecticides during the crop cycle following use of <i>Durivo</i>.
Whiteflies	<i>Admiral Insect Growth Regulator Insecticide</i> 100 g/L pyriproxyfen (7C)	50 mL product / 100 L OR 500 mL product / ha	<ul style="list-style-type: none"> ▪ Apply pyriproxyfen 7 - 10 days after initial appearance of adult whitefly on the leaves or monitor populations and apply based on the number of nymphs observed or when whitefly numbers reach the spray threshold level. ▪ Apply in accordance with <i>SLWF Resistance Management Strategy</i>. <i>Refer Note 9</i>. Importantly, <i>Admiral IGR</i> must be rotated with compounds from different chemical groups.

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Rutherglen bug	<p><i>Crop Care Dominex Duo Insecticide</i> 100 g/L alpha-cypermethrin (3A)</p> <p><i>Conquest Alpha Forte 250 SC Insecticide</i> 250 g/L alpha-cypermethrin (3A)</p>	<p><u>100 g/L product</u> 250 mL product / ha</p> <p><u>250 g/L product</u> 100 mL product / ha</p>	<ul style="list-style-type: none"> ▪ Apply at the first sign of the pests using ground boom spray application equipment only. ▪ DO NOT apply using backpack spraying equipment. ▪ Use a non-ionic wetting agent at the rate specified by the manufacturer for use in horticultural crops. ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. <p><u>Re-entry or Re-handling</u></p> <ul style="list-style-type: none"> ▪ Do not enter treated areas for 3 days after applying the product to control Rutherglen bug, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.
Aphids	<p><i>Crop Care Dominex Duo Insecticide</i> 100 g/L alpha-cypermethrin (3A)</p> <p><i>Conquest Alpha Forte 250 SC Insecticide</i> 250 g/L alpha-cypermethrin (3A)</p>	<p><u>100 g/L product</u> 125 mL product / ha</p> <p><u>250 g/L product</u> 50 mL product / ha</p>	<ul style="list-style-type: none"> ▪ Apply at the first sign of the pests using ground boom spray application equipment only. ▪ DO NOT apply using backpack spraying equipment. ▪ Use a non-ionic wetting agent at the rate specified by the manufacturer for use in horticultural crops. ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. <p><u>Re-entry or Re-handling</u></p> <ul style="list-style-type: none"> ▪ Do not enter treated areas until the spray has dried after applying the product to control cutworms and aphids/thrips, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Green Mirid (Suppression only)	<i>Proclaim Insecticide</i> 44 g/kg emamectin (6)	250 – 300 g/ha OR 25 – 30 g/100 L	<ul style="list-style-type: none"> ▪ For optimum performance, apply cover spray immediately following egg hatch and/or presence of early nymphal stages. ▪ Thorough coverage of foliage is essential for optimum performance. ▪ Use the lower rate on low to moderate infestations. Use higher rate under heavier infestation pressure, or during periods of hot weather. ▪ DO NOT apply more than two (2) applications per crop, with a minimum re-treatment interval of 7 days between applications. ▪ DO NOT apply more than four (4) spray applications of <i>Proclaim</i> within an annual nursery production cycle. ▪ Suppression only is likely to be achieved. An alternative approved (registered/permit) insecticide treatment may be a better option. ▪ Dangerous to bees. DO NOT spray any plants in flower while bees are foraging. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the <i>Proclaim</i> label. ▪ DO NOT apply spray if rainfall is imminent, or spray conditions are unfavourable (i.e. high temperatures, high winds or inversion conditions).
Aphids Leafhoppers Scale insects	<i>Caltex Summer Spray Oil</i> 839 g/L petroleum oil <i>Sacoa Summer Insecticidal Spray Oil</i> 844 g/L petroleum oil	1 - 2 L product / 100 L	<ul style="list-style-type: none"> ▪ Apply a maximum of six (6) sprays with a 7-14 day re-treatment interval. ▪ Apply as foliar spray using airblast sprayer or boom sprayer. ▪ Apply in sufficient water to ensure complete and thorough coverage of foliage and/or crop. <p><u>Plant Phytotoxicity</u></p> <ul style="list-style-type: none"> ▪ Petroleum oil products have demonstrated phytotoxicity and undesirable commercial effects in nursery plant species. <i>Refer Note 5.</i> ▪ Users need to maintain <i>Records</i> for use of this product. <i>Refer Note 6.</i>

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Aphids Whiteflies	<i>Movento 240 SC Insecticide</i> 240 g/L spirotetramat (23)	Foliar: Apply 20 – 40 mL/100 L plus spray adjuvant (as per label) Container Drench: Apply 50 – 100 mL plus spray adjuvant (as per label)	<ul style="list-style-type: none"> ▪ Monitor crops and commence application when thresholds are reached. Use higher rates where rapid build-up or crop growth is observed. ▪ DO NOT apply more than three (3) applications per crop per year. ▪ DO NOT re-apply within 7 days of previous applications. ▪ For drench treatment, apply in sufficient water to wet potting medium, without loss of liquid from container. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to avoid loss of active ingredient from the bottom of the container.
	<i>Pegasus Miticide/Insecticide</i> 500 g/L diafenthuron (12A)	60 – 80 mL product / 100 L	<ul style="list-style-type: none"> ▪ Apply at first sign of aphid or whitefly infestation before damage occurs. ▪ Apply maximum two (2) applications within annual production cycle. ▪ Apply using knapsack sprayer, or airblast or boom sprayer to the point of runoff, ensuring complete coverage. Spray in sufficient volume to provide adequate penetration and coverage, without excessive run-off onto ground. ▪ Monitor regularly for reinfestation and respray if necessary using an alternate product from different chemical Mode of Action (MoA) group.
	<i>Chess Insecticide</i> 500 g/kg pymetrozine (9B)	20 g product / 100 L	<ul style="list-style-type: none"> ▪ DO NOT apply sequential applications of insecticide products from any one chemical group. ▪ Preferably products with the same chemical MoA group should not be used more than twice in a growing season. ▪ <i>Safety Directions</i> (in additional to label) must be adhered to when using these insecticide/miticide products. <i>Refer Note 7.</i> ▪ Observe Re-entry Period for treated areas. <i>Refer Note 8.</i> ▪ DO NOT allow stock to graze treated plant material. Any treated plant material discarded (refuse) should be properly disposed of to prevent access by livestock. ▪ Observe Insect Resistance Management Strategy for silverleaf whitefly (SLW). <i>Refer Note 9.</i>

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Root mealybug	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100 L water and drenching potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
Scale insects	<i>Movento 240 SC Insecticide</i> 240 g/L spirotetramat (23)	<p>Foliar: Apply 20 – 40 mL/100 L plus spray adjuvant (as per label)</p> <p>Container Drench: Apply 50 – 100 mL plus spray adjuvant (as per label)</p>	<ul style="list-style-type: none"> ▪ Target post hatch crawler stage only. Follow up treatment may be necessary to control later hatchings 21 to 35 days later. ▪ DO NOT apply more than two (2) applications within a 90 day period. ▪ DO NOT exceed a maximum of three (3) sprays per crop per year. ▪ For drench treatment, apply in sufficient water to wet potting medium, without loss of liquid from container. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to avoid loss of active ingredient from the bottom of the container.
	<i>Insegar WG Insect Growth Regulator</i> 250 g/kg fenoxy carb (7B) Suppression only	20 or 40 g/100 L	<ul style="list-style-type: none"> ▪ Use the appropriate rate depending on plant size, canopy stage and density, time of year and pest pressure. ▪ Apply maximum of two (2) applications per crop by dilute or concentrate spraying. A minimum re-treatment interval of 10 days must be observed. ▪ Commence application when scale hatchings are at 75%. ▪ Ensure thorough coverage of all plant surfaces. ▪ DO NOT spray if rainfall is expected before spray has dried. ▪ DO NOT treat plants in flower to prevent contamination of pollen and possible effects on bees.

Table 5 cont. Hemiptera (Including: Aphids, Lace bugs, Leafhoppers, Mealybugs, Mirids, Psyllids, Rutherglen bug, Scale insects, Whiteflies)

Pest	Product (MoA)	Rate	Critical Use Comments
<p><i>Bemisia tabaci</i> species (refer note 3) Sweet potato whitefly (native) Silverleaf whitefly AN, B & Q Biotypes</p>	<p><i>Confidor 200 SC Insecticide</i> 200 g/L imidacloprid (4A)</p>	<p>40 mL product per 1,000 seedlings applied as a seedling drench.</p>	<ul style="list-style-type: none"> ▪ For use on nursery stock and plug stock/tube stock (non-food), and tomato and pepper seedlings (excluding seedlings for hydroponic production). ▪ Application should be aimed at the early nymph stages. ▪ Apply 7 to 10 days after the first appearance of adult whiteflies on foliage, or monitor populations and apply based on the numbers of nymphs observed. ▪ DO NOT apply if products containing imidacloprid or other 4A group insecticides have been used on seedlings prior to this treatment. ▪ DO NOT apply more than one application of Confidor (imidacloprid) or other group 4A insecticide per crop. ▪ Apply as a foliar drench in sufficient volume to provide adequate penetration and coverage/drenching of foliage and soil; particularly the underside of leaf area, as nymphs (and adults) are predominantly on the underside of leaves. Ensure even distribution across all seedlings. ▪ Apply by dedicated nursery spray equipment, such as a calibrated hydraulic boom. Users must take care during application to minimise any run-off either during or following application. This should include applying only sufficient volumes of prepared solution to fill the cell thereby avoiding excessive application volumes that may result in run-off. ▪ Apply to seedlings well within 24 hours prior to shipment from a propagation nursery ▪ The application of Confidor (imidacloprid) is not permitted for use on tomato and pepper seedlings grown in hydroponic situations. ▪ <i>Bemisia tabaci</i> (sweet potato whitefly and silverleaf whitefly) are the vectors of tomato yellow leaf curl virus (TYLCV). Refer Note 4. <p><u>Planting of treated crops</u></p> <ul style="list-style-type: none"> ▪ Persons using the product must ensure the receiver of the treated seedlings has been made aware that ideally, planting out should occur within 24 hours of treatment due to: <p>Continued next page</p>

			<p>(i) Watering of seedling trays following application may wash chemical from the cells. If watering is required between application and planting, care should be taken to avoid or minimise leaching from the cells; and</p> <p>(ii) Experience with this use pattern in other crops has shown that there is a potential for crop burn when planting is delayed after treatment and cells begin to dry out. This is thought to occur because the developing young roots of the seedling do not have access to alternative water sources, leading to excessive uptake of Confidor (imidacloprid). This situation appears to be exacerbated in warmer conditions. To help minimise the potential for such damage in this case, it is recommended to transplant seedlings within 24 hours of treatment and provide irrigation soon after to ensure seedlings have access to an alternative water source.</p> <p><u>Occupational Health and Safety</u></p> <ul style="list-style-type: none"> ▪ Persons handling treated trays and seedlings following treatment must wear chemical resistant gloves and wash hands after handling. Persons using the product must ensure the receiver of the treated seedlings has been made aware that the seedlings have been treated with Confidor (imidacloprid) and that those persons handling trays and seedlings should wear chemical resistant gloves and wash hands after handling. The application of Confidor (imidacloprid) is not permitted for use on tomato and pepper seedlings grown in hydroponic situations. <p><u>Residues in Food (tomatoes & peppers only)</u></p> <ul style="list-style-type: none"> ▪ Persons using the product must ensure the receiver of the treated seedlings has been made aware that the treated tomato and pepper seedlings have been treated with Confidor (imidacloprid) and that no further treatments of imidacloprid should be made to ensure maximum residue limits for imidacloprid in these commodities are not exceeded. <p>Continued next page</p>
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			<p><u>Resistance Management</u></p> <ul style="list-style-type: none">▪ Persons using the product must ensure the receiver of the treated seedlings has been made aware that seedlings have been treated with Confidor (imidacloprid) to assist the receiver to adhere to the silverleaf whitefly resistance management strategy. <i>Refer Note 9.</i>▪ To help avoid resistance build-up, Confidor (imidacloprid) should be rotated with other approved products from different chemical groups. Confidor or any other Group 4A insecticide should not be re-applied to each crop, either as a soil or foliar applied treatment. <p><u>Protection of Wildlife</u></p> <ul style="list-style-type: none">▪ Imidacloprid is toxic to certain aquatic species. If run-off should occur action must be taken to retain and dispose of that run-off in an appropriate manner so that it does not contaminate drains or waterways. DO NOT apply if the crop is exposed to heavy rains or irrigation expected to occur within 24 hours of application.
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Table 6. Hymenoptera (Including: Ants)

Pest	Product (MoA)	Rate	Critical Use Comments
Ants	<i>Suscon Maxi Soil Insecticide</i> 50 g/kg imidacloprid (4A)	<u>Small cell trays</u> (5 L capacity) 830 g/m ³ potting media <u>Medium pots</u> (5.1 – 100 L capacity) 415 g /m ³ potting media <u>Large containers</u> (101 – 1,000 L capacity) 208 g/m ³ potting media	<ul style="list-style-type: none"> ▪ Mix the required amount of <i>Suscon</i> product per cubic metre of potting media for the container category being used. ▪ Mix thoroughly before filling pots/tubes and transplanting. Irrigate moderately after potting to activate the insecticide. ▪ DO NOT allow significant leaching and run-off at least three (3) irrigations or 10 days, whichever is longer. ▪ Observe additional <i>Safety Directions</i> for use of imidacloprid based soil treatment products in nursery situations (<i>Refer Note 2</i>).
	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100L water and drench potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and for maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 7. Isoptera (Including: Termites)

Pest	Product (MoA)	Rate	Critical Use Comments
Termites	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100 L water and drenching potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 8. Lepidoptera (Including: Butterflies, Cutworms, Loopers, Moths and Wireworms)

Pest	Product (MoA)	Rate	Critical Use Comments
<p>Heliothis Lightbrown apple moth</p>	<p><i>Dupont Avatar Insecticide</i> 300 g/kg indoxacarb (22A)</p>	<p>170 g product / ha OR 17 g product /100 L water</p>	<ul style="list-style-type: none"> ▪ Target spray treatment against eggs and newly hatched larvae. Apply when larvae reach economic thresholds and damage is observed. Best results are obtained when Dupont Avatar treatments are applied consecutively. DO NOT retreat within 7 days for Heliothis and within 10 days for LBAM. ▪ Apply maximum three (3) foliar spray applications within an annual production cycle. ▪ Thorough coverage of foliage is essential: apply diluent to the point of run-off. ▪ Use in accordance with existing IPM strategy and in accordance with best practice. ▪ Add a non-ionic surfactant (<i>Refer Note 1</i>) at specified label rates. Refer to label directions for mixing and surfactant/wetting agent.
<p>Heliothis Lightbrown apple moth Apple looper Soybean looper</p>	<p><i>Dupont Coragen Insecticide</i> 200 g/L chlorantraniliprole (28)</p>	<p>100 mL product /ha OR 10 mL product / 100 L water</p>	<ul style="list-style-type: none"> ▪ Apply spray treatment as egg and larvae reach economic thresholds and damage is observed. ▪ Apply maximum three (3) foliar spray applications within an annual production cycle. ▪ Thorough coverage of foliage is essential: apply diluent to the point of run-off. ▪ Consecutive treatments should be applied 7 to 10 days apart. DO NOT apply more than two (2) consecutive applications. ▪ Use in accordance with existing AIRAC resistance and industry IPM strategies and in accordance with best practice. ▪ Add a non-ionic surfactant (<i>Refer Note 2</i>) at specified label rates. Refer to label directions for mixing and surfactant/wetting agent.

Table 8 cont. Lepidoptera (Including: Butterflies, Cutworms, Loopers, Moths and Wireworms)

Pest	Product (MoA)	Rate	Critical Use Comments
Cutworms	<p><i>Crop Care Dominex Duo Insecticide</i> 100 g/L alpha-cypermethrin (3A)</p> <p><i>Conquest Alpha Forte 250 SC Insecticide</i> 250 g/L alpha-cypermethrin (3A)</p>	<p><u>100 g/L product</u> 75 mL product / ha</p> <p><u>250 g/L product</u> 30 mL product / ha</p>	<ul style="list-style-type: none"> ▪ Apply at the first sign of the pests using ground boom spray application equipment only. ▪ DO NOT apply using backpack spraying equipment. ▪ Use a non-ionic wetting agent at the rate specified by the manufacturer for use in horticultural crops. ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. <p><u>Re-entry or Re-handling</u></p> <ul style="list-style-type: none"> ▪ Do not enter treated areas until the spray has dried after applying the product to control cutworms and aphids/thrips, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.
Cutworms Wireworms	<p><i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B)</p> <p>Potting and Growing Media</p>	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100 L water and drenching potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<p><i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B)</p> <p>Broadcast</p>	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 8 cont. Lepidoptera (Including: Butterflies, Cutworms, Loopers, Moths and Wireworms)

Pest	Product (MoA)	Rate	Critical Use Comments
Cluster Caterpillar Heliothis Lightbrown Apple Moth	<i>Proclaim Insecticide</i> 44 g/kg emamectin (6)	150 – 250 g/ha OR 15 – 25 g/100 L	<ul style="list-style-type: none"> ▪ For optimum performance, apply cover spray immediately following egg hatch to capture early larval stages. ▪ Thorough coverage of foliage is essential for optimum performance. ▪ Use the lower rate on low to moderate infestations. Use higher rate under heavier infestation pressure, or during periods of hot weather. ▪ DO NOT apply more than two (2) applications per crop, with a minimum re-treatment interval of 7 days between applications. ▪ DO NOT apply more than four (4) spray applications of <i>Proclaim</i> within an annual nursery production cycle. ▪ Dangerous to bees. DO NOT spray any plants in flower while bees are foraging. ▪ DO NOT apply spray if rainfall is imminent, or spray conditions are unfavourable (i.e. high temperatures, high winds or inversion conditions).
Diamondback moth* Loopers * Ornamental brassicas only		250 – 300 g/ha OR 25 – 30 g/100 L	
Heliothis Lightbrown Apple Moth	<i>Insegar WG Insect Growth Regulator</i> 250 g/kg fenoxycarb (7B)	20 or 40 g/100 L	<ul style="list-style-type: none"> ▪ Use the appropriate rate depending on plant size, canopy stage and density, time of year and pest pressure. ▪ Apply maximum of two (2) applications per crop by dilute or concentrate spraying. A minimum re-treatment interval of 10 days must be observed. ▪ Commence application at first signs of egg laying. ▪ Ensure thorough coverage of all plant surfaces. ▪ DO NOT spray if rainfall is expected before spray has dried. ▪ DO NOT treat plants in flower to prevent contamination of pollen and possible effects on bees.

Table 8 cont. Lepidoptera (Including: Butterflies, Cutworms, Loopers, Moths and Wireworms)

Pest	Product (MoA)	Rate	Critical Use Comments
<p>Diamondback moth* Cluster Caterpillar Heliothis Lightbrown Apple Moth</p> <p>* Ornamental brassicas only</p>	<p><i>PyGanic Organic insecticide</i> 13 g/L pyrethrins (3A)</p>	<p>150 – 200 mL product / 100 L</p>	<ul style="list-style-type: none"> ▪ For optimum performance, apply cover spray immediately following egg hatch to capture early larval stages. ▪ Thorough coverage of foliage is essential for optimum performance. ▪ Use the lower rate on low to moderate infestations. Use higher rate under heavier infestation pressure. ▪ DO NOT apply more than four (4) applications of <i>PyGanic</i> per crop. ▪ DO NOT apply more than five (5) spray applications of <i>PyGanic</i> within an annual nursery production cycle. ▪ <i>PyGanic</i> is not intended to be the only method of insect pest control and should be used as part of an integrated pest management program. ▪ <i>PyGanic</i> has broad range insecticidal activity and will kill beneficial insects when present. ▪ Observe the re-entry period listed on the <i>PyGanic</i> label. ▪ DO NOT apply spray if rainfall is imminent, or spray conditions are unfavourable.
<p>Cabbage white butterfly Diamondback moth Heliothis Loopers</p>	<p><i>Durivo Insecticide</i> 100 g/L chlorantraniliprole (28) plus 200 g/L thiamethoxam (4A)</p>	<p>15 – 50 mL product / 1000 seedlings</p>	<ul style="list-style-type: none"> ▪ Apply one (1) soil application only per crop cycle. ▪ Apply in sufficient water volume to ensure uniform application and incorporation into seedling root zone. ▪ Use lower rates when treating crops and varieties with growing seasons of less than 7 weeks. Use higher rates when seasonal conditions favour rapid crop development, or high pest pressure is anticipated ▪ Following use of <i>Durivo</i>, rotate to alternative mode of action insecticide group. DO NOT apply any further applications of Group 4A insecticides during the crop cycle following use of <i>Durivo</i>.

Table 9. Symphyla (Including: Symphylids)

Pest	Product (MoA)	Rate	Critical Use Comments
Symphylids	<i>Nufarm Regent 200SC Insecticide</i> 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100L water and drench potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and for maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.

Table 10. Thysanoptera (Including: Thrips)

Pest	Product (MoA)	Rate	Critical Use Comments
Thrips	<i>Durivo Insecticide</i> 100 g/L chlorantraniliprole (28) plus 200 g/L thiamethoxam (4A)	15 – 50 mL product / 1000 seedlings	<ul style="list-style-type: none"> ▪ Apply one (1) soil application only per crop cycle. ▪ Apply in sufficient water volume to ensure uniform application and incorporation into seedling root zone. ▪ Use lower rates when treating crops and varieties with growing seasons of less than 7 weeks. Use higher rates when seasonal conditions favour rapid crop development, or high pest pressure is anticipated ▪ Following use of <i>Durivo</i>, rotate to alternative mode of action insecticide group. DO NOT apply any further applications of Group 4A insecticides during the crop cycle following use of <i>Durivo</i>.
Thrips (not including Western flower thrips)	<i>Crop Care Dominex Duo Insecticide</i> 100 g/L alpha-cypermethrin (3A) <i>Conquest Alpha Forte 250 SC Insecticide</i> 250 g/L alpha-cypermethrin (3A)	<u>100 g/L product</u> 125 mL product / ha <u>250 g/L product</u> 50 mL product / ha	<ul style="list-style-type: none"> ▪ Apply at the first sign of the pests using ground boom spray application equipment only. ▪ DO NOT apply using backpack spraying equipment. ▪ Use a non-ionic wetting agent at the rate specified by the manufacturer for use in horticultural crops. ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. <p><u>Re-entry or Re-handling</u></p> <ul style="list-style-type: none"> ▪ Do not enter treated areas until the spray has dried after applying the product to control cutworms and aphids/thrips, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

Table 10 cont. Thysanoptera (Including: Thrips)

Pest	Product (MoA)	Rate	Critical Use Comments
Thrips Larvae in soil	<i>Nufarm Regent 200SC</i> Insecticide 200 g/L fipronil (2B) Potting and Growing Media	16 mL / 300 L of potting mix	<ul style="list-style-type: none"> ▪ Prepare solution by mixing with 80-100L water and drench potting mix. ▪ DO NOT apply as a foliar spray or using equipment or settings which will produce a spray. <u>Apply only as a drench.</u> ▪ DO NOT apply more than four (4) applications per crop per year at a minimum re-treatment interval of 7-14 days. ▪ Observe <i>Safety Directions</i> specified on the product label.
	<i>Instar Granular Insecticide</i> 0.25 g/kg fipronil (2B) Broadcast	0.75 – 1.5 kg / 100 m ²	<ul style="list-style-type: none"> ▪ Apply evenly over area to be treated. ▪ Use higher rates for heavier infestations and for maximum residual control. ▪ Irrigate treated area with up to 4 mm of water immediately after application. ▪ Inspect treated area for continued activity. Retreat as necessary to a maximum of five (5) applications per year. ▪ Observe the <i>Re-entry period</i> and <i>Safety Directions</i> specified on the product label.
Thrips	<i>Caltex Summer Spray Oil</i> 839 g/L petroleum oil <i>Sacoa Summer Insecticidal Spray Oil</i> 844 g/L petroleum oil	1 - 2 L product / 100 L	<ul style="list-style-type: none"> ▪ Apply a maximum of six (6) sprays with a 7-14 day re-treatment interval. ▪ Apply as foliar spray using airblast sprayer or boom sprayer. ▪ Apply in sufficient water to ensure complete and thorough coverage of foliage and/or crop. ▪ Thrips that spend a majority of their life cycle protected from sprays are unlikely to be controlled <p><u>Plant Phytotoxicity</u></p> <ul style="list-style-type: none"> ▪ Petroleum oil products have demonstrated phytotoxicity and undesirable commercial effects in nursery plant species. <i>Refer Note 5.</i> Users need to maintain <i>Records</i> for use of this product. <i>Refer Note 6.</i>

Table 10 cont. Thysanoptera (Including: Thrips)

Pest	Product (MoA)	Rate	Critical Use Comments
Greenhouse thrips	<i>PyGanic Organic insecticide</i> 13 g/L pyrethrins (3A)	150 – 200 mL product / 100 L	<ul style="list-style-type: none"> ▪ For optimum performance, apply cover spray immediately following egg hatch to capture early nymphal stages. ▪ Thorough coverage of foliage is essential for optimum performance. ▪ Use the lower rate on low to moderate infestations. Use higher rate under heavier infestation pressure. ▪ DO NOT apply more than four (4) applications of <i>PyGanic</i> per crop. ▪ DO NOT apply more than five (5) spray applications of <i>PyGanic</i> within an annual nursery production cycle. ▪ <i>PyGanic</i> is not intended to be the only method of insect pest control and should be used as part of an integrated pest management program. ▪ <i>PyGanic</i> has broad range insecticidal activity and will kill beneficial insects when present. ▪ Observe the re-entry period listed on the <i>PyGanic</i> label. ▪ DO NOT apply spray if rainfall is imminent, or spray conditions are unfavourable.
Thrips	<i>Movento 240 SC Insecticide</i> 240 g/L spirotetramat (23)	<p style="text-align: center;">Foliar:</p> <p style="text-align: center;">Apply 20 – 40 mL/100 L plus spray adjuvant (as per label)</p> <p style="text-align: center;">Container Drench:</p> <p style="text-align: center;">Apply 50 – 100 mL plus spray adjuvant (as per label)</p>	<ul style="list-style-type: none"> ▪ Monitor crops and commence application when thresholds are reached. Use higher rates where rapid build-up or crop growth is observed. ▪ DO NOT apply more than three (3) applications per crop per year. ▪ DO NOT re-apply within 7 days of previous applications. ▪ For drench treatment, apply in sufficient water to wet potting medium, without loss of liquid from container. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to avoid loss of active ingredient from the bottom of the container.

Table 10 cont. Thysanoptera (Including: Thrips)

Pest	Product (MoA)	Rate	Critical Use Comments
Western flower thrips	<i>Lancer 750 SP Insecticide</i> 750 g/kg acephate (1B)	High volume: Mix 130 g product / 100 L Low volume: Apply 1.3 kg product / ha	<ul style="list-style-type: none"> ▪ Follow all label recommendations and restrictions. ▪ DO NOT apply more than three (3) applications per crop. ▪ Observe the WFT Insecticide Management Strategy. <i>Refer Note 10.</i> ▪ Apply in sufficient volume to obtain even coverage and penetration of plants. Use the appropriate water rate depending on plant size, canopy stage and density, time of year and pest pressure. ▪ For high volume spraying, apply in 500 – 1,000 L water per hectare. ▪ DO NOT spray if rainfall/overhead irrigation is expected before the spray is dry. ▪ DO NOT treat vegetable seedlings. ▪ DO NOT treat crops in flower. ▪ DO NOT use on crops destined for export. ▪ DO NOT apply to carnations later than 6 days before picking. ▪ DO NOT spray more than once every 28 days on carnations and chrysanthemums. Certain chrysanthemum varieties have, on occasions, been damaged by acephate sprays. Prior to spraying carry out a test spray on a small patch of ornamentals to ensure damage does not occur. ▪ For all other crops follow the Western Flower Thrips Insecticide Resistance Management Strategy. <i>Refer Note 10.</i>
	<i>Orthene Xtra Insecticide</i> 970 g/kg acephate (1B)	High volume: Mix 100 g product / 100 L Low volume: Apply 1 kg product / ha	

NOTES:

1. DO NOT add surfactant if (i) mixing with another product that already contains a surfactant and/or that product label advises not to use a surfactant, or (ii) if mixing with liquid fertiliser. DO NOT use BS1000 or Activator-90 as these products may cause plant phytotoxicity.

2. Safety Directions for imidacloprid based soil treatment products:

Ensure that the following safety directions are followed when **mixing** and **using** the product;

- The product will irritate the eyes, nose, throat and skin.
- Avoid contact with eyes and skin.
- When opening the container and loading, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length PVC gloves, goggles and disposable dust face mask covering mouth and nose.
- If product gets in eyes, wash it out immediately with water.
- Wash hands after use.
- After each day's use, wash gloves, goggles and contaminated clothing.

3. *Bemisia tabaci* is a species complex composed of numerous biotypes (strains), which may differ from each other both genetically and biologically. The native AN biotype and B and Q biotypes have been reported in Australia.

4. Transmission of tomato yellow leaf curl virus (TYLCV)

Bemisia tabaci (sweet potato whitefly and silverleaf whitefly) are the vectors of TYLCV. The treatment of seedlings under this permit will not necessarily prevent transmission of the virus to treated plants. Treatment of seedlings under this permit is only intended to control silverleaf whitefly, which is the vector for TYLCV. Additional measures may be necessary to control silverleaf whitefly and hence reduce the potential for transmission of TYLCV in the nursery before application of Confidor (imidacloprid), and in the field as the crop develops and Confidor activity diminishes.

5. Phytotoxicity associated with use of petroleum oil based insecticide product is nursery plants: Petroleum oil products have demonstrated phytotoxicity and undesirable commercial effects in nursery plant species. DO NOT apply these products unless phytotoxicity has been fully assessed. This will help minimise potential for any undesirable effects. However, this action cannot guarantee crop safety as application method, environmental and crop conditions may vary from test treatment to whole of crop treatment. Any instances of phytotoxic effects **must** be reported to the permit holder.

The following Restraints/Conditions of Use must be observed to reduce the risk of phytotoxic damage to plants:

DO NOT tankmix with any other chemicals or fertilisers unless fully evaluated.

DO NOT apply if temperature exceeds or is likely to exceed 30°C within 24 hours of treatment.

DO NOT apply within one month prior to, or following a sulfur spray or other incompatible pesticide as listed on approved label.

DO NOT apply to crops in weak, damaged or stressed conditions.

6. Record keeping for use of petroleum oil based insecticide products:

The permit holder must maintain a record of all reported use performed under this permit. Specifically the records must include (i) date and location where the use occurred, and (ii) persons conducting the use and contact details. Any reported incidents of phytotoxicity or adverse experience must additionally include (i) product used and batch identity of the product used, (ii) species treated and use pattern, (iii) weather and growing conditions, and (iv) nature of adverse experience. The records must be progressively maintained whilst the permit is in

force and for a minimum period of two years from the date of expiry of this permit. Upon a request being made, the records are to be provided: (i) immediately if the request is verbally from an APVMA *Inspector* who has attended the premises, (ii) in the time specified in the written correspondence containing the request, and (iii) at the time a permit renewal application is received.

7. Safety Directions

When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist, and a washable hat, elbow-length PVC gloves and disposable face-mask (mist). When using the prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves. When using the product in an enclosed/protected situation (e.g. glasshouse/greenhouse) where natural ventilation is restricted, also wear protective goggles and disposable face-mask (mist) that covers mouth and nose. Refer to product label for further *Safety Directions*.

8. Re-entry Period

DO NOT enter insecticidal sprayed areas or enclosed (covered) spaces for 24 hours after treatment. When prior entry is necessary, limit duration of entry and wear cotton overalls buttoned to the neck and wrists (or equivalent clothing) and elbow-length chemical resistant gloves.

9. Resistance Management Strategy for silverleaf whitefly (SLW):

Silverleaf whitefly has the capacity to develop resistance to many insecticides, including diafenthiuron based products approved under this permit. To avoid the development of resistance to chemical insecticides used against SLW, the following measures should be considered:

- Application should be aimed at the early nymph stages.
- Apply 7 to 10 days after the first appearance of adult whiteflies on foliage, or monitor populations and apply based on the numbers of nymphs observed.
- DO NOT re-apply consecutive sprays; rotate with product from a different chemical MoA group. Avoid overuse of any single MoA group of insecticides.
- Spray in sufficient volume to provide adequate penetration and coverage of foliage; especially the underside of the leaf area. Thorough coverage of the under-surface of leaves, where SLW (adults and nymphs) predominantly live, is essential.
- Be aware that insecticides used to control other insect pests may impact on resident populations of natural predators of SLW, and may consequently lead to flare-ups of SLW.

10. Resistance Management Strategy for western flower thrips (WFT):

Chemicals alone will not control western flower thrips. Effective control can only be achieved with an integrated approach using additional cultural control methods. The most important cultural control method is the removal of all flowering weeds (especially white clover) from within and around the crop. Uncontrolled flowering weeds harbour abundant thrips that reinfest the crop and overwhelm chemical control. Crop debris may harbour western flower thrips and so should be ploughed in or burned. If the crop is at all sensitive to viruses, such as Tomato Spotted Wilt Virus (TSWV), it is essential to remove the virus infected plants (burn or bury).

Effective chemical management of WFT is made difficult by resistance to a wide range of insecticides and limited accessibility to life stages during spraying. Only the larval and adult stages of WFT are contacted by insecticide sprays. Eggs are protected in plant tissue, while pupal stages shelter in soil and debris. In order to effectively manage WFT in crop, chemicals should be sprayed at intervals. The intervals are governed by the length of the life-cycle, which is controlled by temperature.

Monitoring allows insecticides to be used only when necessary and so vigilant crop monitoring will reduce insecticide costs, reduce insecticide impact on beneficial insects and lessen the likelihood of resistance development. Sticky traps should be used to monitor thrips numbers at a minimum density of ca. 3-10 ha. A new series of three sprays should not be commenced without appropriate monitoring.

Chemical applications should be applied in a series of sprays until population levels have fallen to acceptable levels. To keep resistance levels down, change chemical groups between series of sprays. A series of chemical sprays will be three applications of the one chemical. Apply three consecutive sprays of the same chemical and alternate to a chemical in a different group for the following series of sprays. Importantly, after the first application, if control is less than adequate and resistance is suspected the additional applications of the same chemical should not be applied. There must be at least a 3 week break (<20°C) or 2 week break (>20°C) before another series of sprays is applied. If monitoring indicates the need to spray earlier, then insecticide resistance, inappropriate spray application or inadequate cultural control methods should be suspected and expert advice sought

Western Flower Thrips (WFT) Insecticide-Resistance Management Strategy Available at: <http://www.dpi.nsw.gov.au/agriculture/horticulture/pests-diseases-hort/multiple/thrips/wft-resistance> (NSW DPI Updated July 2012).