FREQUENTLY ASKED QUESTIONS

How will Delegate be packaged?
- Delegate will be packaged in a 840 g container (jug) as a formulated wettable granule (WG)
- A case of Delegate consists of 6 x 840 g packages, with 20 of cases per pallet

Will Delegate have a measuring device?
- A plastic measuring device for Delegate insecticide will be produced with two measuring devices packaged per case
- The device will measure up to 200 grams, in 20 gram increments

When will Delegate and insecticide be available for purchase?
- Canadian PMRA granted registration on Delegate in October 2007
- Product will be available for sale for the 2008 application season

Are adjuvants recommended with Delegate?
- No adjuvants are registered for use with Delegate in Canada
- No adjuvant has been shown to have detrimental effects to Delegate insecticide performance

What is the biological activity of Delegate?
- Delegate has demonstrated excellent efficacy across a broad spectrum of insects pests on a variety of crops
- Active by ingestion (primary) and contact (secondary)
- Active across multiple insect growth stages
- Delegate penetrates leaves (has translaminar activity) to provide control of dipterous and lepidopterous leafminers larvae
- Sap-feeding insects are not generally controlled with foliar applications of Delegate; there are some exceptions, such as Psylla sp. (pear psylla) which Delegate controls

How fast does Delegate work?
- Paralysis and feeding cessation occurs within minutes to hours depending on pest
- Insect death occurs within hours
- Symptoms are visual, providing rapid and tangible assurance that the product is performing
- Rapid speed of kill and feeding cessation enhance plant and fruit protective qualities of Delegate insecticide

What is the symptomology of Delegate?
- Feeding stops – crawling/walking stops
- Weak tremors
- Flaccid paralysis
- Body fluid loss
- Insects showing symptoms do not recover and soon die
- Symptoms are visual, providing rapid and tangible assurance that the product is performing

Is residual control provided by Delegate?
- Delegate does provide residual control
- The length of residual control depends on the pest and crop
- For example, Delegate provides 14 days of residual control in tree fruits

What is the safe re-entry recommendation on the Canadian Label?
- Delegate ia an extremely safe product with an excellent environmental profile
- No signage or precautions are required before or after an application of Delegate
- The Canadian Delegate label recommends that the area not be entered for a period of 12 hours post application

What is the summary of Delegate effects on beneficial insects?
- In spite of higher insecticidal activity, the toxicity of Delegate to natural enemies is low
- Delegate has limited toxicity to predatory insects such as lacewings and ladybird beetles, but is intrinsically toxic to predatory mites, thrips and parasitic wasps
- The relatively short environmental persistence and greater ingestion versus contact activity of Delegate mitigates effects on these species; once the spray deposit has dried, impact on sensitive species is greatly reduced
- In tree crops, effects have been noted on predatory mites after multiple consecutive applications, but no flaring of pest mites has been observed

What are the effects on bees?
- Delegate is non-toxic to bees when the spray residue is dry
- Do not apply when bees are actually foraging

Dow AgroSciences
Delegate™ WG
INSECTICIDE

FACT SHEET

DELEGATE* WG

Dow AgroSciences
Delegate™ WG
INSECTICIDE

Delegate is a superior insecticide, with a novel mode of action and improved environmental profile, offering the best insect control in fruit and vegetable crops.

Delegate offers:

- **Long-lasting control of a broad spectrum of insect pests in a variety of crops**
- **Low use rates**
- **Low impact on most beneficial insects**

INTRODUCTION

Delegate is a new fruit and vegetable insecticide from the 'spinosyn' chemistry class providing long-lasting control of a broad spectrum of insect pests.

Insects are controlled two ways – by contact and ingestion – providing quick knockdown and residual. Delegate also possesses translaminar ability within the leaf.

OUTSTANDING CONTROL OF CODLING MOTH

Since 2004 Delegate has been included in dozens of university and independent field trials. In these trials, Delegate has shown outstanding control of codling moth. Performance – based on fruit injury (stings and entries) – has been equal to or better than industry standards.

UNIQUE MODE OF ACTION

Spinetoram, the active ingredient in Delegate, is derived from fermentation of Saccharopolyspora spinosa as are other spinosyns. Fermentation is followed by chemical modification to create the unique active ingredient in Delegate. Generally, Delegate affects the insect nervous system. No other class of products – organophosphates, carbamates, pyrethroids, neonicitinoids – affects the insect nervous system with the same mode of action as Delegate.

Specifically, Delegate causes excitation of the nervous system by altering the function of nicotinic and GABA-gated ion channels. It does not interact with the known binding sites of other classes of insecticide. Because of Delegate's unique mode of action, it is a rotational product that can be used in an IPM system.

IPM COMPATIBLE

Dozens of field trials done in key crops have shown that Delegate has low impact on populations of key arthropod natural enemies, including big-eyed bugs, damsel bugs, ladybugs and lacewings.

Target Pests
- Codling Moth
- Leafrollers
- Leafminers
- Oriental fruit moth
- Armyworm
- Diamond back moth
- Cabbage Looper
- Imported cabbage worm
- Grape berry moth
- Asparagus beetle
- Blueberry spanworm
- Thrips

Crops
- Pome Fruit
- Stone Fruit (apricots, cherries, nectarines, peaches, plums)
- Fruiting Vegetables
- Caneberries
- Bushberries
- Asparagus
- Cole crops
- Leafy Vegetables
- Leaves of Root Vegetables
- Root Vegetables
- Strawberries
- Grapes

Mode of action/Group
- Group 5 Insecticide

APPLICATION GUIDELINES

Crop	Pest	Rate	Timing
Pome Fruit	Codling Moth and Oriental Fruit Moth	420 g/Ha	• For the control of each generation, apply at first egg hatch based on pheromone trap catches and degree days after biofix dates. These pests must be controlled before the larvae penetrate the fruit so early timing is critical. • Repeat at 14 day intervals to maintain control depending on pest pressure.
	Oblique-banded and Threelined Leaf rollers	210-420 g/Ha	• Overwintering (spring) generation control – apply when larvae have emerged and are actively feeding but before they roll up in the leaves. Under high insect pressure, an application timed to target the overwintering generation is recommended to reduce summer populations. • Summer generation control – apply at first egg hatch as determined by monitoring adult moth flights. • Repeat in 14 days if monitoring of populations indicates a second application is required. Use the higher rate under high pest pressure and/or larger larvae.
	Spotted and Western Tentiform Leafminers	210-420 g/Ha	• Apply at egg hatch as determined by monitoring or at the first sign of sap-feeding on the leaves to control leafminers. Use the higher rate under high pest pressure.
	Apple Maggot (suppression)	420 g/Ha	• Apply 7-10 days after the first apple maggot fly is caught on yellow scented sticky boards near or in the orchard. • Repeat in 14 days if populations warrant.
	Plum Curculio (suppression)	420 g/Ha	• Monitor trees along the edge of the orchard or adjacent wild trees for the first sign of feeding damage after bloom. • Repeat in 14 days if populations warrant.
Stone Fruit	Oriental Fruit Moth	420 g/Ha	• Apply at first egg hatch of each generation based on pheromone trap catches and degree days after biofix dates. Repeat at 14 day intervals if required.
	Obliquebanded and Threelined Leafrollers	210 – 420 g/Ha	• Apply at first egg hatch as determined by monitoring adult moth flights. Repeat in 14 days if monitoring of populations indicate a second application is required. Thorough coverage is necessary for optimal control. Use the higher rate for high pest pressure and/or larger larvae.
Fruiting Vegetables	Cabbage Looper	140 – 200 g/Ha	• Time the application to coincide with peak egg hatch. Repeat applications based on population monitoring. Use the higher rate for heavy infestations or advanced growth stages of the target pest.
Caneberries	Obliquebanded Leafroller	100 – 200 g/Ha	• Apply at egg hatch or to small larvae. Use the higher rate for high populations and/or larger larvae. Reapply if populations warrant.
Asparagus	Asparagus Beetle (Suppression)	140 – 280 g/Ha	• Make applications to the asparagus ferns only. Application timing is at egg hatch or to small larvae. Use the higher rate under high insect infestations and/or advanced growth stages of the beetle.
Bushberries	Blueberry Spanworm (Suppression)	100 – 200 g/Ha	• Monitor insect populations to determine application timing. Apply at egg hatch or to small larvae.
Leafy Vegetables	Diamondback Moth Cabbage Looper Imported Cabbageworm	140 – 200 g/Ha	• Apply when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications. Use the higher rate for high infestations or advanced growth stages of the target pests.
Grape	Grape Berry Moth (Suppression)	280 g/Ha	• Time the application for egg hatch of each generation. A repeat application may be required if populations of the pest are high and/or woodlots are near the vineyard. Apply in sufficient water to ensure thorough coverage of the foliage.
Root Vegetables	Diamondback Moth Cabbage Looper Imported Cabbageworm	140 – 200 g/Ha	• Apply when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications. Use the higher rate for heavy infestations or advanced growth stages of the target pests.
Strawberry	Thrips (Suppression)	200 – 280 g/Ha	• Monitor insect population to determine when initial application is required. A three to four day re-treatment schedule may be necessary for thrips if there is a heavy pest pressure or if the pest population is increasing rapidly.
Leaves of Root and Tuber Vegetables	Diamondback Moth Cabbage Looper Imported Cabbageworm	140 – 200 g/Ha	• Apply when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications. Use the higher rate for heavy infestations or advanced growth stages of the target pests.
Cole Crops	Diamondback Moth Cabbage Looper Imported Cabbageworm	140 – 200 g/Ha	• Apply when pests appear, targeting eggs at hatch or small larvae. Heavy infestations may require repeat applications. Use the higher rate for heavy infestations or advanced growth stages of the target pests.
Soybeans	Armyworm	100 – 200 g/Ha	• Time the initial application to target small larvae and use sufficient spray volume to ensure good coverage. Use the higher rate for heavy infestation and/or difficult spray coverage situations.
Cereals	Armyworm	100 – 200 g/Ha	• Scout for the pest with enough regularity to monitor egg laying and egg hatch and treat when thresholds are reached. Applications perform best when timed to coincide with peak egg hatch and/or small larval stage of growth of each generation.

TANK MIXES

• No tank mixes are registered

MIXING INSTRUCTIONS

• Fill the spray tank one-half full with the amount of clean water required. Start agitation and add the required amount of Delegate Insecticide. Continue agitation while filling the spray tank to the required spray volume. Maintain agitation in the spray tank during mixing, loading, and application

OPTIMIZING PERFORMANCE

• Rainfast when spary solution has dried on vegetation

• Spray solution pH can affect the performance of Delegate

– If too low (acidic) or high (basic), the knockdown ability and length of residual control may be negatively affected

– A pH between 6 to 8 is preferred for optimal performance

– Desired spray solution pH should be achieved prior to the addition of Delegate to the spray tank

• Ground application: Use spray equipment capable of thorough coverage of the target. Orient the boom and the nozzles to obtain uniform crop coverage

• Aerial application: Not registered for aerial application

CROP ROTATIONS

No re-cropping restrictions

RETREATMENT AND PRE-HARVEST INTERVALS

Fruit Crops

• **Pome Fruit** – Minimum treatment interval of 7 days, and preharvest interval of 7 days

• **Bushberries** – Minimum treatment interval of 6 days, and preharvest interval of 3 days

• **Grapes** – Minimum treatment interval of 5 days, and preharvest interval of 7 days

• **Caneberries** – Minimum treatment interval of 5 days, and preharvest interval of 1 day

• **Stone Fruit** – Minimum treatment interval of 7 days, and preharvest interval of 7 days (preharvest interval of 14 days for peaches, nectarines and apricots)

• **Strawberry** – Minimum treatment interval of 3 days, and preharvest interval of 1 day

Vegetable Crops

• **Cole Crops** – Minimum treatment interval of 5 days, and preharvest interval of 1 day

• **Asparagus** – Minimum treatment interval of 5 days, and preharvest interval of 60 days

• **Fruiting Vegetables and Okra** – Minimum treatment interval of 5 days, and preharvest interval of 1 day

• **Leafy Vegetables** – Minimum treatment interval of 5 days, and preharvest interval of 1 day

• **Leaves of Root and Tuber Vegetables** – Minimum treatment interval of 7 days, and preharvest interval of 3 days

• **Root Vegetables** – Minimum treatment interval of 5 days, and preharvest interval of 3 days

Field Crops

• **Soybean** – Minimum treatment interval of 5 days, and preharvest interval of 28 days

• **Cereals** – Minimum treatment interval of 5 days, and preharvest interval of 21 days

PRECAUTIONS

• Maximum of 3 applications per year.

• Delegate is toxic to bees when bees are sprayed directly. However, residues that have aged three hours are non-toxic to bees.

• Do not make more than 3 consecutive applications of Group 5 insecticides.

• In grapes, do not make more than 2 consecutive applications of Group 5 insecticides.