

**GROUP 3 | 28 INSECTICIDES**

## VOLIAM XPRESS® Insecticide

INSECTICIDE

SUSPENSION

COMMERCIAL

For control of listed insect pests infesting various crops.

### ACTIVE INGREDIENTS:

Lambda-cyhalothrin ..... 50 g/L  
Chlorantraniliprole..... 100 g/L

Contains 1,2-benzisothiazolin-3-one at 0.044% OR 5-chloro-2-methyl-4-isothiazolin-3-one at 0.00082% and 2-methyl-4-isothiazolin-3-one at 0.00027% as preservatives.

**READ THE LABEL AND THIS PAMPHLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN**

**DANGER**



**POISON**

**POTENTIAL SKIN SENSITIZER**

REGISTRATION NO: **30325**  
PEST CONTROL PRODUCTS ACT

NET CONTENTS: **1 L to 1000 L**

**Syngenta Canada Inc.**  
140 Research Lane, Research Park  
Guelph, Ontario N1G 4Z3  
Telephone: 1-877-964-3682

Label

## 1.0 NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

## 2.0 FIRST AID

**IF POISONING IS SUSPECTED, IMMEDIATELY** contact a doctor or a poison control centre. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**If swallowed**, call a poison control centre or doctor **IMMEDIATELY** for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

**If on skin or clothing**, take off contaminated clothing. Rinse skin **IMMEDIATELY** with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**If in eyes**, hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**If inhaled**, move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

## 3.0 TOXICOLOGICAL INFORMATION

In case of poisoning, treat symptomatically. This product contains petroleum distillate. Vomiting may cause aspiration pneumonia. In case of exposure to skin of face or other sensitive areas, some individuals may feel a tingling or numbness. This is a transitory effect and does not cause harm to skin.

Skin exposure may cause transient sensations (tingling, burning, itching, numbness).

## 4.0 PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN AND ANIMALS.

Fatal or poisonous if swallowed. DO NOT INGEST. Avoid contact with eyes, skin, or clothing. Potential skin sensitizer.

**RESTRICTED ENTRY INTERVAL (REI): DO NOT** enter or allow worker entry into treated areas during the Intervals specified in the following table:

Crop(s)	Postapplication Activity	REI
Corn (sweet)	Hand harvesting	3 days
	All other activities	1 day
Corn (seed)	Hand detasseling	3 days
	All other activities	1 day
Brassica crops: Broccoli, Chinese broccoli (gai lan), Brussels sprouts, cabbage, Chinese cabbage (napa), cauliflower and kohlrabi	Hand harvesting	8 days
	Mechanical harvesting	3 days
	Scouting, hand pruning, thinning, tying, training, irrigation (hand set)	6 days
	Hand weeding/topping	7 days
	All other activities	1 day
All other crops	All activities	1 day

Workers shall be given oral warning of the re-entry interval. For entry no sooner than 4 hours after application and during the REI refer to provincial guidance on early entry.

Apply only when the potential for drift beyond the area to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

If this pest control product is to be used on a commodity that may be exported to other countries in the world and you require information on acceptable residue levels in these countries, please contact Syngenta Canada Inc. at 1-87-SYNGENTA / 1-877-964-3682.

## 5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Wear long-sleeved shirt, long pants, chemical resistant gloves, socks and shoes during mixing, loading, applications, clean up and repair, unless otherwise listed below. Gloves are not required in a close cab or cockpit. Remove and wash contaminated clothing before reuse.

For applications using an open-cab groundboom equipment, when handling more than 143 L per person per day, also wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides or a NIOSH-approved canister approved for pesticides OR use a closed cab tractor that provides both a physical barrier and respiratory protection (such as dust/mist filtering and/or vapour/gas purification system). The closed cab must have a chemical-resistant barrier that totally surrounds the occupant and prevents contact with pesticides outside the cab. Respirator and gloves are not required to be worn during application within a closed cab. These restrictions are in place to minimize exposure to individual applicators. Application may need to be performed over multiple days or using multiple applicators.

When handling more than 2.2 L per person per day using mechanically-pressurized handheld equipment, also wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH-approved canister approved for pesticides during application.

For all applications using handheld equipment, wear eye, head and respiratory protection when applying above waist height, including overhead.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Wash splashes from skin IMMEDIATELY with plenty of water. Remove PPE immediately after handling this product. Wash the outside of gloves with soap and water before removing. As soon as possible, wash thoroughly and change into clean clothing. After spraying, wash hands and shower thoroughly with soap and water.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Wear freshly laundered clothes daily.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

## **6.0 ENVIRONMENTAL PRECAUTIONS**

Toxic to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

Toxic to small wild mammals.

TOXIC to bees. Minimize spray drift to reduce harmful effects on bees in habitats close to the application site. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to the evening when most bees are not foraging. Avoid applications when bees are foraging in the treatment area in ground cover containing blooming weeds. To further minimize exposure to pollinators, refer to the complete guidance "Protecting Pollinators during Pesticide Spraying – Best Management Practices" on the Health Canada website ([www.healthcanada.gc.ca/pollinators](http://www.healthcanada.gc.ca/pollinators)).

Toxic to certain beneficial arthropods (which may include predatory and parasitic insects, spiders, and mites). Minimize spray drift to reduce harmful effects on beneficial arthropods in habitats next to the application site such as hedgerows and woodland.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

To reduce risk to aquatic organisms from runoff, a vegetative filter strip of at least 10 metres wide between the field edge and adjacent, downhill aquatic habitats must be observed, as specified under DIRECTIONS FOR USE

This product contains active ingredients and aromatic petroleum distillates, which are toxic to aquatic organisms.

Chlorantraniliprole is persistent and may carry over. It is recommended that any products containing chlorantraniliprole not be used in areas treated with this product during the previous season.

The use of this product may result in contamination of groundwater, particularly in areas where soil is permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

## 7.0 STORAGE

Store this product away from food or feed. Keep unused product in original container tightly closed, and locked up. Store above 0°C in the original container to prevent freezing. If solids are present, return to room temperature and agitate until solids are dissolved. Keep in closed container when not in use. Avoid contamination of seed, feed and foodstuffs.

## 8.0 DISPOSAL

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

### For Recyclable Container

**DO NOT** reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

- (1) Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
- (2) Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING,  
CALL 1-800-327-8633 (FASTMED)***

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Pamphlet

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## **7.0 STORAGE**

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CALL 1-800-327-8633 (FASTMED)***

## 9.0 PRODUCT INFORMATION

VOLIAM XPRESS® Insecticide is a foliar insecticide providing both rapid knockdown and long lasting residual control of Lepidopteran insects and listed sucking and chewing insects. After a foliar application, most of the compound stays on the leaf surface and a small amount penetrates into the leaf tissue. Initial and residual control is contingent upon thorough crop coverage.

## 10.0 DIRECTIONS FOR USE

### 10.1 General Information

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

This product may be tank mixed with a fertilizer, a supplement, or with registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.

In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury. The user should contact Syngenta Canada Inc. at 1-87-SYNGENTA / 1-877-964-3682 for information before applying any tank mix that is not specifically recommended on this label.

Syngenta Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) of all potential tank mixes under all environmental conditions or for all crop varieties. Tank mixes that are not specifically listed on this label should be tested on a small area first, under local conditions and using standard practices, to confirm the tank mix is suitable for widespread application.

To determine the physical compatibility of this product with other products, use a jar test.

Always read and follow label directions including WALES mixing order.

To protect pollinators, follow the instructions regarding bees in the ENVIRONMENTAL PRECAUTIONS section.

**DO NOT** apply in greenhouses.

A Vegetative Filter Strip (VFS) of at least 10 metres wide must be constructed and maintained. The VFS is required between the field edge and adjacent, downhill aquatic habitats to reduce risk to aquatic organisms from run-off. Aquatic habitats include, but are not limited to, lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, and estuaries.

The VFS is to be composed of grasses and may also include shrubs, trees, or other vegetation. Additional guidance can be found on the PMRA Environmental Risk Mitigation webpages.

Both VFS and spray drift buffer zones must be observed.

Apply VOLIAM XPRESS Insecticide when listed insect pest populations begin to build, but before populations reach economically damaging levels. Economic thresholds for listed pests controlled or suppressed by VOLIAM XPRESS Insecticide may be available from your local agricultural authorities.

Thorough spray coverage is essential for optimal performance. Apply VOLIAM XPRESS Insecticide in sufficient water to ensure good coverage. The use of higher water volumes will generally result in better coverage, especially under adverse conditions (e.g., hot, dry) or where a dense plant canopy exists.

Control or suppression of some insect species with pyrethroid insecticides decreases as temperature rises. For best results, apply VOLIAM XPRESS Insecticide during the early morning before temperatures rise, and during the evening, past the heat of the day.

Optimum application timing for the control or suppression of specific listed pest species is best determined by monitoring pest development and populations. In general, VOLIAM XPRESS Insecticide will be most effective against early developmental stages of surface feeding pests and against adults of pests that deposit eggs within plant parts. Follow recommendations provided by local pest monitoring services regarding appropriate application timing for your area. Follow provincial spray calendars for optimum timing of programmed spray applications.

Localized populations of some insect pests have developed resistance to other synthetic pyrethroid insecticides. Consult regional extension specialists regarding the susceptibility of local populations. Follow Integrated Pest Management (IPM) techniques to minimize the need for insecticide applications and ensure that needed applications are timed for optimum effectiveness.

## 10.2 Ground Application

### 10.2.1 General Precautions

**Field Sprayer Application:** **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 8 km/h at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural and Biological Engineers medium classification (ASABE Standard S-572.1). Air induction nozzles must be used for the ground application of this product. Boom height must be 60 cm or less above the crop or ground. Clean protective clothing and application equipment regularly.

### 10.2.2 Mixing Instructions

1. Ensure that the sprayer interior is clean, then fill the spray tank with ½ the required amount of water and engage gentle agitation. Good agitation is indicated by a rippling or rolling action on the surface of the water.
2. Add any WG or DF formulation mix partners and agitate to ensure complete mixing.
3. Add VOLIAM XPRESS Insecticide (SC) and agitate to ensure complete mixing.
4. Add any additional SC formulation mix partners and agitate to ensure complete mixing.
5. Add any EC formulation mix partners and agitate to ensure complete mixing.

6. Fill the tank to  $\frac{3}{4}$  the required amount of water.
7. Add any solution (SN or SL) formulation mix partners and agitate to ensure complete mixing.
8. Finish filling the sprayer with water, maintaining good agitation.
9. After any break in spraying operations, agitate thoroughly before spraying again.
10. Spray the pesticide suspension the same day as mixing.
11. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

### 10.2.3 Spraying Instructions

1. Water Volume: Apply in a minimum spray volume of 100 L/ha or as directed in the crop and pest specific instructions below, whichever is LARGER. Appropriate water volumes aid good coverage.
2. Spray Nozzles: 80° or 110° drift reducing flat fan (e.g. those with a pre-orifice or turbulence chamber) or air induction nozzles are recommended. Do not use flood type nozzles, controlled droplet application equipment, spray foils or hollow cone nozzles.
3. Pressure: As recommended by the nozzle manufacturer to achieve ASABE medium sized droplets.
4. Apply at uniform speed and avoid overlapping. Shut off spray boom while starting, turning, slowing or stopping to avoid potential crop injury from over application.

### 10.2.4 Equipment Clean-Up

#### Before Spraying:

- Prior to using VOLIAM XPRESS Insecticide, ensure that the spray tank, lines and filter are thoroughly clean.

#### After Spraying:

- Thoroughly clean application equipment immediately after spraying. Do not allow VOLIAM XPRESS Insecticide residue to dry within the spray tank
- When using tank mixes, consult the tank-mix partner label for additional cleanup instructions.
- The following recommendations are provided:
  1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **Do not** clean the sprayer near desirable vegetation, flowering crops or weeds, wells or other water sources.
  2. Remove all nozzles and screens and wash separately.
  3. Dispose of all rinsate in accordance with provincial regulations.

### 10.3 Aerial Application

**DO NOT** apply using aerial application equipment, unless otherwise specified in the crop specific use directions.

#### 10.3.1 General Precautions

**Aerial Application:** **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 8 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural and Biological Engineers (ASABE S572.1) medium-coarse classification. **DO NOT**

apply under weather conditions of less than 50% relative humidity and temperatures greater than 20°C. Nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

Apply only by fixed-wing or rotary aircraft equipment which have been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label. Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage, and only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual* developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Label rates, conditions, and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. When no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

### **10.3.2 Ground Crew Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted. It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

All ground crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing field sprayer label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

### **10.3.3 Pilot Precautions**

Read and understand the entire label before using this product. Ensure uniform application and a uniform spray with minimum potential for drift. GPS based marking is preferred.

**DO NOT** apply during atmospheric conditions of thermal inversion which are characterized by dead calm.

### 10.3.4 Mixing Instructions

Mixing this product directly in the aircraft hopper **IS NOT** recommended. The use of chemical handling or managing equipment to load the hopper **IS** recommended. This product **MAY BE** inducted into a hopper which is prefilled with water or when the product and water are mixed prior to entering the hopper. This product **MAY BE** batch mixed and pumped into the hopper. In all cases the chemical handling equipment and hopper interior must be clean prior to use.

**NOTE:** WG and DF formulations are preferentially batch mixed.

**NOTE:** SC, SN, and SL formulations may be inducted or batch mixed.

**NOTE:** EC formulations are preferentially batch mixed.

It is **NOT** recommended to combine WG or DF formulations with tank mix partners within a single batch. Batch mix WG or DF formulations first, pump into the hopper, and then add tank mix partners by induction or as an additional batch mix.

1. Pump water into the hopper to at least  $\frac{1}{4}$  to  $\frac{1}{2}$  of the desired spray volume. Engage hopper circulation, if possible.
2. Thoroughly batch mix any WG or DF formulation mix partners and agitate to ensure complete mixing. Pump into the hopper
3. Induct or thoroughly batch mix VOLIAM XPRESS Insecticide and any additional SC formulations.
4. Thoroughly batch mix any EC formulation mix partners. EC formulations may be added the batch from Step 2, if desired.
5. Induct or thoroughly batch mix any solution (SN or SL) formulation mix partners. SN/SL formulations may be added to the batch from Step 2, if desired.
6. Pump batch mixed SC, EC, and/or SN/SL products into the hopper.
7. Finish filling the hopper with water.
8. If it was not possible to engage hopper agitation in Step 1, do so as soon as possible once airborne.
9. Spray the pesticide suspension the same day as mixing.
10. Do not mix, load or clean equipment where there is a potential to contaminate wells or aquatic systems.

### 10.3.5 Spraying Instructions

1. Water Volume: Apply in a spray volume of 40 L/ha. Appropriate water volumes aid good coverage.
2. Spray Nozzles: Use only ASABE nozzles rated to deliver medium-coarse droplets of volume median diameter of 340 microns or greater.
3. Pressure: As recommended by the nozzle manufacturer to achieve ASABE coarse or medium sized droplets.
4. Ensure hopper agitation is engaged whenever possible during flight.

### 10.3.6 Equipment Clean-Up

#### Before Spraying:

- Prior to using VOLIAM XPRESS Insecticide, ensure that the hopper, chemical handling equipment, lines and filter are thoroughly cleaned.

#### After Spraying:



- Thoroughly clean application equipment immediately after spraying. Do not allow VOLIAM XPRESS residue to dry within application equipment.
- When using tank mixes, consult the tank-mix partner label for additional cleanup instructions.
- The following recommendations are provided:
  1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **Do not** clean application equipment near desirable vegetation, flowering crops or weeds, wells or other water sources.
  2. Remove all nozzles and screens and wash separately.
  3. Dispose of all rinsate in accordance with provincial regulations.

#### **10.4 Spray Buffer Zones**

A spray buffer zone is NOT required for:

- Uses with hand-held application equipment permitted on this label

The spray buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:			
		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Field sprayer	Labelled Oilseed Crops (flax seed, mustard seed (oilseed type), rapeseed (including canola))	10	5	3	1
	Crop Group 9 – Cucurbit Vegetables (Chinese waxgourd, citron melon, cucumber, gherkin, edible gourd (includes hyotan, cucuzza, hechima, Chinese okra), momordica spp., muskmelon, pumpkin, summer squash, winter squash, watermelon)	25	10	5	3
	Labelled Brassica crops –(Broccoli, chinese broccoli (gai lon), Brussels sprouts, cabbage, chinese cabbage (napa), cauliflower and kohlrabi),				
	Crop Group 6 - Legumes ((Succulent or Dried); bean ( <i>Lupinus</i> spp.), bean ( <i>Phaseolus</i> spp.), bean ( <i>Vigna</i> spp.), Broadbean (fava bean), chickpea (garbanzo bean), guar, jackbean, lablab bean, lentils, pea ( <i>Pisum</i> spp), pigeon pea, soybean, soybean (immature seed), sword bean)				
Field sprayer	Corn (including field, pop and sweet types, and crops grown for seed production)	20	10	5	3
	Crop Group 1C - Tuberous and Corm Vegetables (Arrowroot, Chinese Artichoke, Jerusalem Artichoke, Edible Canna, Chufa, Dasheen (taro), Potato, Sweet Potato, True Yam)				
	Crop Group 8-09 – Fruiting vegetables (eggplant, African eggplant, pea eggplant, scarlet eggplant, garden huckleberry, goji berry, groundcherry, martynia, okra, pepino, bell pepper, non-bell pepper, sunberry, tomatillo, tomato, currant tomato, bush tomato, cocona, naranjilla, roselle, tree tomato and cultivars, varieties and hybrids of these commodities)				

Method of application	Crop		Buffer Zones (metres) Required for the Protection of:			
			Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Aerial	Corn (including field, pop and sweet types, and crops grown for seed production)	Fixed wing	800	800	800	550
		Rotary wing	800	725	400	225
	Crop Group 1C Tuberous and Corm Vegetables (Arrowroot, Chinese Artichoke, Jerusalem Artichoke, Edible Canna, Chufa, Dasheen (taro), Potato, Sweet Potato, True Yam)	Fixed wing	800	800	800	575
		Rotary wing	800	425	475	250
	Crop Group 6 - Legumes ((Succulent or Dried) bean ( <i>Lupinus</i> spp.), bean ( <i>Phaseolus</i> spp.), bean ( <i>Vigna</i> spp.), Broadbean (fava bean), chickpea (garbanzo bean), guar, jackbean, lablab bean, lentil, pea ( <i>Pisum</i> spp), pigeon pea, soybean, soybean (immature seed), sword bean)	Fixed wing	800	275	325	125
		Rotary wing	500	275	325	125
		Fixed wing	800	275	325	125
		Rotary wing	500	275	325	125

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

Spray buffer zones for field sprayer or aerial application CANNOT be modified using the Spray Buffer Zone Calculator.

## 11.0 CROP DIRECTIONS FOR USE

When applied as directed, VOLIAM XPRESS Insecticide will control the listed pests, unless otherwise indicated as suppression.

DO NOT cut treated fields for hay/forage. DO NOT graze treated fields. DO NOT feed treated crops to livestock. For grasses/non-grasses grown for seed production only, DO NOT feed seed screenings and aftermath to livestock.

### 11.1 Crop Group 1C Tuberous and Corm Vegetables

<b>CROPS</b>	<b>Crop Group 1C Tuberous and Corm Vegetables</b> Arrowroot, Chinese Artichoke, Jerusalem Artichoke, Edible Canna, Chufa, Dasheen (taro), Potato, Sweet Potato, True Yam
<b>PEST</b>	Diamondback moth, cabbage looper, black cutworm, imported cabbageworm, swede midge, corn earworm, tobacco hornworm, tomato hornworm, variegated cutworm, fall armyworm, beet armyworm, <i>Liriomyza</i> leafminers, psyllids
<b>PRODUCT RATE (mL/ha)</b>	500
<b>APPLICATION METHOD</b>	Ground or aerial application
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	7 days
<b>APPLICATION TIMING</b>	Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring. Consult provincial guidelines and local extension experts for monitoring protocols and thresholds for treatment.  <b>Black cutworm</b> - Apply to foliage when rain is not expected in the next 24 hours. For optimal control, apply to smaller plants or when lower portions of the plant can receive adequate coverage.
<b>NOTES</b>	Do not apply more than 2 applications per year.  <b>DO NOT</b> feed treated crops to livestock.  <b>DO NOT</b> apply VOLIAM XPRESS Insecticide, which contains a Group 28 insecticide, following a seed piece, in-furrow, or soil application of any Group 28 insecticide.  <b>Water Volume:</b> <u>Ground Application:</u> Apply in a minimum of 150 L of water per hectare. <u>Aerial Application:</u> Apply in 40 L of water per hectare.

## 11.2 Brassica Crops

<b>CROPS</b>	<b>VOLIAM XPRESS may be applied to the following Brassica crops only:</b> Broccoli, Chinese broccoli (gai lan), Brussels sprouts, cabbage, Chinese cabbage (napa), cauliflower and kohlrabi
<b>PEST</b>	Onion thrips, black cutworm, armyworm, fall armyworm, beet armyworm, corn earworm, Liriomyza leafminers
<b>PRODUCT RATE (mL/ha)</b>	500
<b>APPLICATION METHOD</b>	Ground application
<b>APPLICATION TIMING</b>	Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring. Consult provincial guidelines and local extension experts for monitoring protocols and thresholds for treatment.  <b>Black cutworm</b> - apply to foliage when rain is not expected in the next 24 hours. For optimal control, make application to smaller plants or when lower portion of the plant can receive adequate spray coverage.
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	3 days for mechanical harvesting 8 days for hand harvesting
<b>NOTES</b>	Apply by foliar broadcast spray.  <b>DO NOT</b> apply more than 3 applications per growing season.  Do not make a foliar application of VOLIAM XPRESS Insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed treated with any Group 28 insecticide.  <b>DO NOT</b> apply by air.  Apply in sufficient water to ensure thorough coverage.  Use sufficient water thorough coverage, 100 to 200 L/ha is recommended.

### 11.3Crop Group 6 – Legumes (Succulent or Dried)

<b>CROPS</b>	<b>Crop Group 6 - Legumes (Succulent or Dried)</b> Bean (Lupinus spp.), bean (Phaseolus spp.), bean (Vigna spp.), Broadbean (fava bean), chickpea (garbanzo bean), guar, jackbean, lablab bean, lentil, pea (pisum spp), pigeon pea, soybean, soybean (immature seed), sword bean
<b>PEST</b>	Grasshopper, lygus bug, pea leaf weevil, potato leaf hopper
<b>PRODUCT RATE (mL/ha)</b>	225
<b>PEST</b>	Soybean aphid, pea aphid, bean aphid, bean leaf beetle
<b>PRODUCT RATE (mL/ha)</b>	225 - 550
<b>PEST</b>	Western bean cutworm, cabbage looper, armyworm, fall armyworm, beet armyworm, corn earworm, European corn borer
<b>PRODUCT RATE (mL/ha)</b>	500
<b>APPLICATION METHOD</b>	Ground or aerial application
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	7 days for succulent shelled and edible-podded peas and beans  14 days of harvest of dry peas and beans (including lupins, lentils, chickpeas and fava beans)  21 days of harvest for soybean
<b>APPLICATION TIMING</b>	<b>DO NOT</b> use more than 3 applications per season by ground application.  <b>DO NOT</b> use more than 1 application per season by aerial application.  Do not make a foliar application of VOLIAM XPRESS Insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed treated with any Group 28 insecticide.  Apply no later than when the first feeding is seen on foliage. Reapply after 7 days depending on the presence of significant populations as determined by local monitoring.
<b>NOTES</b>	<b>DO NOT</b> cut treated field for hay/forage. <b>DO NOT</b> graze treated fields. <b>DO NOT</b> feed treated crops to livestock.  <b>Water Volume:</b> <u>Ground Application:</u> Apply in a minimum of 100-200 L of water per hectare.  <u>Aerial Application:</u> Apply in 40 L of water per hectare.  Do not exceed 225 g chlorantraniliprole per hectare per year (by ground or aerial application), and 75 g lambda-cyhalothrin per hectare per year (by ground application) or 25 g lambda-cyhalothrin per hectare per year (by aerial application). This includes the use of VOLIAM XPRESS Insecticide as well as additional Group 3 and/or Group 28 insecticides. Consult the label of other products containing these active ingredients prior to treatment to ensure that the annual maximum is not exceeded.

### 11.4Crop Group 8-09 – Fruiting Vegetables

<b>CROPS</b>	<b>Crop Group 8-09 – Fruiting vegetables</b> Eggplant, African eggplant, pea eggplant, scarlet eggplant, garden huckleberry, goji berry, groundcherry, martynia, okra, pepino, bell pepper, non-bell pepper, sunberry, tomatillo, tomato, currant tomato, bush tomato, cocona, naranjilla, roselle, tree tomato and cultivars, varieties and hybrids of these commodities
<b>PEST</b>	Armyworm, fall armyworm, beet armyworm, variegated cutworm, tobacco hornworm, tomato hornworm, tomato fruitworm, corn earworm, European corn borer, cabbage looper, black cutworm, potato psyllid
<b>PRODUCT RATE (mL/ha)</b>	500
<b>APPLICATION METHOD</b>	Ground application
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	7 days
<b>APPLICATION TIMING</b>	Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.  <b>Black cutworm</b> - Apply to foliage when rain is not expected in the next 24 hours. For optimal control, make application to smaller plants or when lower portion of the plant can receive adequate spray coverage.
<b>NOTES</b>	<b>DO NOT</b> apply more than 2 applications per year.  <b>DO NOT</b> apply by air.  Do not make a foliar application of VOLIAM XPRESS Insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed treated with any Group 28 insecticide.  <b>Water Volume:</b> Ground Application: Apply in a minimum of 150 L of water per hectare

### 11.5 Crop Group 9 – Cucurbit Vegetables

<b>CROPS</b>	<b>Crop Group 9 – Cucurbit Vegetables</b> Chinese waxgourd, citron melon, cucumber, gherkin, edible gourd (includes hyotan, cucuzza, hechima, Chinese okra), momordica spp., muskmelon, pumpkin, summe squash, winter squash, watermelon
<b>PEST</b>	Striped cucumber beetle, squash bug, cabbage looper, black cutworm, armyworm, fall armyworm, corn earworm, leafminers
<b>PRODUCT RATE (mL/ha)</b>	500
<b>APPLICATION METHOD</b>	Ground application
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	1 day
<b>APPLICATION TIMING</b>	<p>Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds. Reapply after a minimum of 5 days if monitoring indicates it is necessary.</p> <p><b>Black cutworm</b> - apply to foliage when rain is not expected in the next 24 hours. For optimal control, make application to smaller plants or when lower portion of the plant can receive adequate spray coverage.</p>
<b>NOTES</b>	<p><b>DO NOT</b> apply more than 3 applications per growing season.</p> <p><b>DO NOT</b> apply by air.</p> <p>Do not make a foliar application of VOLIAM XPRESS Insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed treated with any Group 28 insecticide.</p> <p><b>Water Volume:</b> Use sufficient water for thorough coverage. 100 to 200 L/ha is recommended.</p>



### 11.6Corn

<b>CROPS</b>	<b>CORN</b> (including field, pop and sweet types, and crops grown for seed production)
<b>PEST</b>	European corn borer, corn earworm, western bean cutworm, armyworm
<b>PRODUCT RATE (mL/ha)</b>	500
<b>APPLICATION METHOD</b>	Ground or aerial application
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	1 day of harvest for sweet corn 21 days for harvest of field corn, pop corn and corn grown for seed
<b>APPLICATION TIMING</b>	Apply no later than when the first feeding is seen on foliage. Reapply after 7 days depending on the presence of significant populations as determined by local monitoring. Where there are two generations of pests, late plantings of sweet corn will require sprays from the late whorl stage until close to harvest. This treatment will not prevent internal cob damage if the insect has penetrated the ear.
<b>NOTES</b>	<p><b>DO NOT</b> apply more than 2 applications per year.</p> <p>Do not make a foliar application of VOLIAM XPRESS Insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed treated with any Group 28 insecticide.</p> <p><b>DO NOT</b> cut treated field for silage/forage. <b>DO NOT</b> graze treated fields. <b>DO NOT</b> feed treated crops to livestock. For grasses/non-grasses grown for seed production only, <b>DO NOT</b> feed seed screenings and aftermath to livestock.</p> <p><b>Water Volume:</b>  <u>Ground Application:</u> Apply in a minimum of 150 L of water per hectare.  <u>Aerial Application:</u> Apply in 40 L of water per hectare.</p> <p>Do not exceed 225 g chlorantraniliprole per hectare per year (by ground or aerial application), and 69 g lambda-cyhalothrin per hectare per year (by ground application) or 50 g lambda-cyhalothrin per hectare per year (by aerial application), to all types of corn. This includes the use of VOLIAM XPRESS Insecticide as well as additional Group 3 and/or Group 28 insecticides. Consult the label of other products containing these active ingredients prior to treatment to ensure that the annual maximum is not exceeded.</p>

### 11.7 Oilseed Crops

<b>CROPS</b>	<b>VOLIAM XPRESS may be applied to the following Oilseed crops only:</b> Flax seed, mustard seed (oilseed type), rapeseed (including canola)
<b>PEST</b>	Flea beetle, lygus bug, cabbage seedpod weevil, imported cabbageworm, diamondback moth, cabbage looper, bertha armyworm, grasshoppers, sunflower beetle
<b>PRODUCT RATE (mL/ha)</b>	225
<b>APPLICATION METHOD</b>	Ground or aerial application
<b>APPLICATION INTERVAL</b>	7 days
<b>PRE-HARVEST INTERVAL (PHI)</b>	7 days
<b>APPLICATION TIMING</b>	<p>Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.</p> <p><b>Cabbage Seedpod Weevil (adults)</b> - Apply at the bud to early flowering stage of crop development. Timing of applications should also be based on the presence of significant populations of adults, as determined by local monitoring. Application prior to adult migration into the field will not be effective. It is recommended to apply prior to egg laying. <b>Make only 1 application per season by either ground or aerial application equipment.</b></p> <p><b>Flea beetle</b> - To prevent migration of overwintering adults throughout the field, ground spray a 15 m strip around the field at the first sign of flea beetle feeding.</p> <p><b>Grasshoppers</b> – Treat for grasshoppers up to but not including winged adults (up to 2.5 cm in length). If insect pressure is high apply a spray to a 15 m strip around the field. Avoid environmentally sensitive areas and unregistered crops.</p> <p><b>Sunflower beetle</b> - Apply when insects appear.</p>
<b>NOTES</b>	<p><b>DO NOT</b> use more than 3 applications per season by ground application.</p> <p><b>DO NOT</b> make more than 1 application per season by aerial application.</p> <p>Do not make a foliar application of VOLIAM XPRESS Insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed treated with any Group 28 insecticide.</p> <p><b>DO NOT</b> cut treated field for hay/forage. <b>DO NOT</b> graze treated fields. <b>DO NOT</b> feed treated crops to livestock. For grasses/non-grasses grown for seed production only, <b>DO NOT</b> feed seed screenings and aftermath to livestock.</p> <p><b>Water Volume:</b> <u>Ground Application:</u> Apply in a minimum of 100 - 200 L of water per hectare. <u>Aerial Application:</u> Apply in 40 L of water per hectare.</p>

## 12.0 RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, please note that VOLIAM XPRESS Insecticide contains a Group 3 insecticide (lambda-cyhalothrin) and a Group 28 insecticide (chlorantraniliprole). Any insect population may contain individuals naturally resistant to VOLIAM XPRESS Insecticide and other Group 3 or 28 insecticides. The resistant individuals may dominate the insect population if these groups of insecticides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but are specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

### **To delay insecticide resistance:**

Where possible, rotate the use of VOLIAM XPRESS Insecticide or other Group 3 or 28 insecticides with different groups that control the same pests.

Make no more than 2 successive applications per generation to the same insect species on a crop. The following application to the target pest(s) must be with registered product with a different mode of action.

Use tank mixtures with insecticides from a different group when such use is permitted.

Insecticide use should be based on an IPM program that includes scouting and record keeping, and considers cultural, biological and other chemical control practices.

Monitor treated pest populations for resistance development. If resistance is suspected, do not reapply VOLIAM XPRESS Insecticide or other Group 3 or Group 28 insecticides.

Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.

For further information or to report suspected resistance, contact Syngenta Canada Inc. company representatives at 1-87-SYNGENTA (1-877-964-3682) or at [www.syngenta.ca](http://www.syngenta.ca).

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