

2021-5772
2021-12-06

GROUP 3 INSECTICIDE

ZIVATA™

Emulsifiable Concentrate Insecticide

COMMERCIAL (AGRICULTURAL)

For the Control of Listed Insects on Oilseeds, Cereals, Pasture, Tree Fruit, Strawberries, Tobacco, Potatoes, Tomatoes, Cole Crops, Leaf and Head Lettuce, Greenhouse Lettuce, Bulb Vegetables (Crop Group 3), Chokecherry, Legume Vegetables (Crop Group 6), Corn, Ferns of Asparagus, Timothy Grown for Hay or Seed, Sweet Potato, Carrots and Outdoor Ornamentals

ACTIVE INGREDIENT:

Lambda-cyhalothrin 120 g/L

READ THE LABEL AND ATTACHED PAMPHLET BEFORE USING

KEEP OUT OF THE REACH OF CHILDREN



EYE IRRITANT

POTENTIAL SKIN SENSITIZER

REGISTRATION NO. 32427 PEST CONTROL PRODUCTS ACT

NET CONTENTS: 1 – 1050 L

ADAMA Agricultural Solutions Canada Ltd.
300 - 191 Lombard Avenue
Winnipeg MB R3B 0X1
1-855--264-6262

For emergency medical help and health/safety inquiries call ProPharma at 1-877-250-9291 (24 hours a day)
For spill, leak or fire call INFOTRAC at 1-800-535-5053 (24 hours a day)

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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.

FIRST AID

IF SWALLOWED: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

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 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 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.

Take the container label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION

Treat symptomatically.

PRECAUTIONS

1. **KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.** Keep unused product in original container tightly closed, locked up and away from food.
2. Harmful or fatal if swallowed. May irritate eyes. Avoid contact with eyes. Potential skin sensitizer. If hands are contaminated, wash with soap and water before touching other areas of skin. When applying this product workers must wear long pants, long-sleeved shirts, and chemical resistant boots. In addition, during mixing, loading, clean-up and repair activities, workers must also wear chemical resistant gloves, safety goggles and a face shield. Avoid touching face with contaminated gloves or clothing. Wash gloves before removal. Wash protective equipment with soap and water after each use. Applicators using airblast equipment must also wear either a respirator with a NIOSH/MSHA/BHSE approved organic vapour removing cartridge with a prefilter approved for pesticides OR a NIOSH/MSHA/BHSE approved canister approved for pesticides.
3. Do not re-enter treated areas until 24 hours after treatment. Workers shall be given oral warning of the re-entry interval.
4. ZIVATA™ may be applied aerially only to those crops for which this use is specified on this label.

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If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's website at www.croplife.ca.

ENVIRONMENTAL PRECAUTIONS

This product contains an active ingredient that is TOXIC to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE. This product is toxic to bees when exposed to direct treatment, drift, or residues on flowering crops or weeds. DO NOT apply this product to flowering crops or weeds if bees are visiting the treatment area. Minimize spray drift to reduce harmful effects on bees in habitats close to the application site. Spray deposits should be dry before bees commence foraging in treated crop. 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. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

STORAGE

Store in a cool, well ventilated area away from foodstuffs and out of the reach of children and animals. Store above 0°C. Storage below 0°C will not impair the effectiveness of ZIVATA™, however, following such storage, agitate well before use.

SPILL CLEANUP

Wear appropriate protective equipment (gloves, glasses, apron) when attempting to clean up the spill. If the container is leaking, secure leak and place the container into a drum or heavy gauge plastic bag. Contact ADAMA Agricultural Solutions Canada Ltd. at 1-855-264-6262 for further information.

For spills and leaks – contain the liquid with dikes of inert material (soil, clay, kitty litter, etc.). Absorb the spill onto inert material and shovel into a sealable waste container.

On hard surfaces – sprinkle spill area with detergent and scrub in a small quantity of water with a coarse broom. Let stand 10 minutes then absorb onto an inert material and shovel into the waste container. Dispose of all waste, including broom, in accordance with provincial requirements.

On soil – remove the top 15 cm of soil in the spill area and replace with fresh soil. Dispose of all waste in accordance with provincial requirements. For more information on the disposal of waste and the clean-up of spills, contact the provincial regulatory agency and the manufacturer.

DISPOSAL OF UNUSED, UNWANTED PRODUCT

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.

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CONTAINER DISPOSAL

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 1-800-535-5053 (24 hours a day)***

ZIVATA is a trademark of an ADAMA Group Company.
All other trademarks are the property of their respective owners.

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PRODUCT INFORMATION

ZIVATA™ is a photostable, synthetic pyrethroid insecticide. It is a fast acting stomach and contact insecticide effective against a broad spectrum of foliar pests. It has no fumigant or systemic activity. Best results will be obtained with ZIVATA™ when applied against the early development stages of the pest as determined by regular monitoring.

DIRECTIONS FOR USE

Control of some insect species with pyrethroid insecticides decreases as temperature rises. For best results, apply ZIVATA™ during the early morning before temperatures rise, and during the evening, past the heat of the day. Use sufficient water for thorough coverage.

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

Optimum application timing for the control of specific pest species is best determined by monitoring pest development and populations. In general, ZIVATA™ is most effective against early developmental stages of surface feeding pests and against adults of pests which 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.

Repeated applications are not advised for orchards where integrated pest management programs are being followed because severe reductions in beneficial arthropods may result. If pest monitoring services recommend repeated insecticide applications, consider alternating ZIVATA™ applications with insecticides from different classes to prevent the development of resistant pest populations. Localized populations of some insect pests (e.g., Colorado Potato Beetle, Spotted Tentiform Leafminer) have developed resistance to other synthetic pyrethroid insecticides and can be expected to quickly develop resistance to ZIVATA™. Consult regional extension specialists regarding the susceptibility of local populations. Follow Integrated Pest

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Management (IPM) techniques to minimize the need for insecticide applications and ensure that needed applications are timed for optimum effectiveness.

Ground Application:

Field sprayer application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

Airblast application: DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. DO NOT apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

Aerial Application

Generic Aerial Application Label Instructions – Directions for Use

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

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. Where 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.

Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply 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.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

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Operator 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.

The field 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 ground boom 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.

Product Specific Precautions

Read and understand the entire label before using this product.

For aerial applications, ensure the aircraft is equipped and calibrated to deliver a uniform spray coverage with a minimum potential for drift. To ensure uniform application, use an appropriate marking device. Apply in weather conditions that will not promote drift. Suggested conditions for good aerial application are moderate temperatures (less than 25°C), moderate relative humidity (greater than 40%), and light winds (3 to 9 km/h).

Use only medium or coarse nozzles rated as delivering droplets of volume median diameter of 215 microns or greater. Examples: 6506 flat fan, CP 0.125 deflector nozzle with a low shear deflector angle (30 degrees), D12-56 disc-core.

Apply in a spray volume of 10 to 40 litres per hectare. Use water volumes at the higher end of this range to ensure good coverage for optimum insect control and to minimize drift. Do not apply more than 83 mL ZIVATA™ per hectare per treatment occasion by air.

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 16 km/h at flying height at the site of application. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing or rotorspan.

Apply 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.

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

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It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

Clean and decontaminate protective clothing and application equipment regularly.

Buffer Zones

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment. The 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 Habitats 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	All field crops and outdoor ornamentals		15	15	15	15
Airblast	All orchard fruit crops and outdoor ornamentals		80	80	80	80
Aerial	Potatoes, oilseed crops, cereal crops, alfalfa, unimproved pasture, summerfallow	Fixed or Rotary wing	100	20	100	100
		Field and Sweet corn	Fixed wing	225	20	800
		Rotary wing	250	15	800	500
	Legume vegetables	Fixed wing	600	25	800	800
		Rotary wing	300	20	800	525

For tank-mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) 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.

FRUIT CROPS

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
APPLES	Apple Aphid, Apple Brown Bug, Apple	83	Ground application only	Timing of applications should be based	DO NOT apply within 7 days of

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	Leaf Midge, Codling Moth, Fruit Tree Leafroller, Oblique Banded Leafroller, Pale Apple Leafroller, Spotted Tentiform Leafminer, White Apple Leafhopper, Winter Moth			on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.	harvest. DO NOT use more than 3 applications per year. Allow a 7 day interval between treatments. DO NOT APPLY BY AIR.
	Plum Curculio, Tarnished Plant Bug, Woolly Apple Aphid	104	Ground application only		
CHERRIES	Plum Curculio, Cherry Maggot	104	Ground application only	<i>Plum Curculio:</i> Shuck stage, when the fruit is the size of a pea, and 10 to 12 days later if oviposition scars are detected. <i>Cherry Maggot:</i> When the fruit is turning from green to pink. A second application may be required 10 days later.	DO NOT apply within 7 days of harvest. DO NOT use more than 3 applications per year. Allow a 7 day interval between treatments. DO NOT APPLY BY AIR.
PEACHES AND NECTARINES	Green Peach Aphid, Oriental Fruit Moth, Tarnished Plant Bug	104	Ground application only	Presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.	DO NOT apply within 7 days of harvest. DO NOT use more than 3 applications per year.

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					Allow a 7 day interval between treatments. DO NOT APPLY BY AIR.
PEARS	Pear Psylla (nymphs and adults), Codling Moth	83	Ground application only	Presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.	DO NOT apply within 7 days of harvest. DO NOT use more than 1 application per year. DO NOT APPLY BY AIR.
PLUMS	Plum Curculio, Mealy Plum Aphid	104	Ground application only	<i>Plum Curculio</i> : Shuck stage, when the fruit is the size of a pea, and 10 to 12 days later if oviposition scars are detected. <i>Mealy Plum Aphid</i> : Timing of applications should be based on local monitoring for significant populations.	DO NOT apply within 7 days of harvest. DO NOT use more than 3 applications per year. Allow a 7 day interval between treatments. DO NOT APPLY BY AIR.
STRAWBERRIES	Bud (Clipper) Weevil, Meadow Spittle Bug and Tarnished Plant Bug, Black Vine Weevil adults (Suppression only)	104	Ground application only	<i>Bud Weevil</i> : when buds are visible in crown and again when first buds show white. <i>Spittle Bug</i> : when first noticed. <i>Plant Bug</i> : 7 to 10 days after first bloom and repeat 7 to 10 days later.	DO NOT apply within 7 days of harvest. DO NOT use more than 3 applications per year. Allow a 7 day interval between treatments.

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				<p><i>Black Vine Weevil adults:</i> Applications to be made as soon as weevils appear, and just after the final harvest of strawberries.</p>	<p>DO NOT APPLY BY AIR. <i>Black Vine Weevil adults:</i> For the suppression of black vine weevil adults, apply in sufficient water to ensure thorough coverage. The recommended application volume is 300-400 L/ha.</p>
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VEGETABLE CROPS

CROPS	PEST	RATE (mL/Ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
<p>COLE CROPS (Broccoli, Brussels Sprouts, Cabbage, Cauliflower)</p>	<p>Crucifer Flea Beetle, Diamondback Moth Larvae, Imported Cabbageworm</p>	42	<p>Ground application only</p>	<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>DO NOT apply within 1 day of harvesting cabbage and 3 days of harvesting broccoli, Brussels sprouts or cauliflower. DO NOT use more than 3 applications per year. Allow a 7 day interval between treatments.</p>
	<p>Cabbage Looper</p>	83			

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					DO NOT APPLY BY AIR.
CORN (including field, pop and sweet types, and crops grown for seed production)	Fall Armyworm, Cutworms, European Corn Borer, Corn Earworm	83	Ground or aerial application	<p>Spray no later than when the first feeding is seen on foliage. Repeat sprays at 4 to 7 day intervals depending on the presence of significant populations as determined by local monitoring. Where there are two generations, 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.</p> <p><i>Cutworms</i> (up to the 5-leaf stage): Applications should be made under moist conditions in the evening or night when cutworm activity is highest. Do not disturb the soil surface for 5 days after treatment.</p>	<p>DO NOT apply within 1 day of harvest for sweet corn. DO NOT apply within 14 days if the crop is being harvested for silage.</p> <p><i>Ground Application:</i> DO NOT use more than 3 applications per year.</p> <p><i>Aerial Application:</i> DO NOT make more than 2 applications of 83 mL/ha of the allowed seasonal total by air.</p>
Tank Mix with Bumper® 432 EC Fungicide					

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ZIVATA™ can be tank mixed with Bumper® 432 EC Fungicide for insect and foliar disease control. Apply ZIVATA™ at a rate of 83 mL/ha in tank mix with Bumper® 432 EC Fungicide at a rate of 150-300 mL/ha. Refer to both the ZIVATA™ and Bumper® 432 EC Fungicide labels for insects and diseases controlled, specific application instructions and precautions. Insects and crops must be at the correct stage as specified on the ZIVATA™ as well as Bumper® 432 EC Fungicide labels.

This tank mix can be applied by air and ground. Use 40 L of water per hectare when applying by air.

This tank mix is not registered for use on popcorn.

Do not harvest treated corn within 14 days of this tank-mix application.

Do not make more than 3 applications on seed corn and 2 applications on field and sweet corn per year.

Compatibility should always be confirmed by premixing small proportional quantities of water, ZIVATA™, and the tank-mix partner in advance.

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
POTATOES	Potato Flea Beetle, Potato Leafhopper, Tarnished Plant Bug, Tuber Flea Beetle	83	Ground application	When insects or damage appear.	The maximum rate per season must not exceed 250 mL of product per hectare. DO NOT apply within 7 days of harvest. Ground Application: DO NOT use more than 3 applications per year if using the 83 mL per hectare rate. DO NOT use more than 2 applications per year if using the 125 mL per hectare rate. Use a minimum of
		83	Aerial application	Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring. Allow a 7 day interval between treatments.	
	Colorado Potato Beetle: susceptibility to pyrethroid insecticides should be confirmed using an appropriate assay.	83 to 125	Ground application	Use 125 mL rate when Colorado	
		83	Aerial application	Potato Beetle larvae are beyond the second instar stage of development or when populations are high. Allow a 7 day interval between treatments.	

	European corn borer	83	Ground application	Spray at egg hatch and no later than when the first feeding damage is seen on foliage. Reapply at 4 to 7 day intervals if monitoring indicates that it is necessary. Consult provincial guidelines and local extension experts for monitoring protocols and thresholds for treatment.	100 L water for ground application. Use sufficient water for thorough coverage. Aerial Application: DO NOT make more than 2 applications of 83 mL/ha of the allowed seasonal total by air.
		83	Aerial application		
TOMATOES	Potato Flea Beetle, Potato Leafhopper, Tarnished Plant Bug, Cutworms	83	Ground application only	When insects or damage appear. Timing of applications should be based on the presence of	DO NOT apply within 7 days of harvest. DO NOT use more than 3 applications per year if using the 83 mL per hectare rate. DO NOT use more than 2 applications per year if using the 125 mL per hectare rate. Allow a 7 day interval between treatments. The maximum rate per season must not exceed 250 mL
	Colorado Potato Beetle: susceptibility to pyrethroid insecticides should be confirmed using an appropriate assay.	83-125	Ground application only	vulnerable pest developmental stages and significant populations as determined by local monitoring. <i>Cutworms</i> (up to the 5- leaf stage): Applications should be made under moist conditions in the evening or night when cutworm activity is highest. Do not disturb the soil surface for 5 days after treatment.	

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				<p><i>Colorado Potato Beetle</i>: Use 125 mL per hectare rate when Colorado Potato Beetle larvae are beyond the second instar stage of development, or when populations are high.</p>	<p>of product per hectare. DO NOT APPLY BY AIR.</p>
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TOBACCO

CROPS	PEST	RATE (mL/Ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
TOBACCO Seedlings, Greenhouse	Cutworm (Darksided and White)	2 mL/30 L water	Ground application only	Cutworm activity is greatest during the late evening and night. Application of ZIVATA™ should be timed as close as possible to insect feeding activity.	Mix 2 mL of ZIVATA™ in 30 L of water and apply to 200 m ² of plant bed. DO NOT APPLY BY AIR.
FIELD TOBACCO	Cutworm (Darksided and White)	2 mL/30 L water	Ground application only	Cutworm activity is greatest during the late evening and night. Application of ZIVATA™ should be timed as close as possible to insect feeding activity.	Apply the recommended rate of ZIVATA™ in 225 to 450 L of water per hectare using spray pressure of 175 to 350 kPa. DO NOT APPLY BY AIR.
COVER CROP TREATMENT (RYE OR WHEAT)	Cutworm (Darksided and White)	42	Ground application only	When crop is 10 to 15 cm high, 4-5 days before ploughdown. Cutworm activity is greatest during	Apply 42 mL of ZIVATA™ per hectare once to rye or wheat cover. Application

				the late evening and night. Application of ZIVATA™ should be timed as close as possible to insect feeding activity.	should also be made to fence rows and to a 15 m strip into nearby cover crop. DO NOT APPLY BY AIR.
SOIL TREATMENT	Cutworm (Darksided and White)	83	Ground application only	Apply once to the soil 5 days before transplanting. Cutworm activity is greatest during the late evening and night. Application of ZIVATA™ should be timed as close as possible to insect feeding activity.	DO NOT incorporate. DO NOT disturb the soil surface for at least 5 days following treatment since mixing of ZIVATA™ with soil will reduce its effectiveness. Application should also be made to fence rows and to a 15 m strip into nearby cover crops. DO NOT APPLY BY AIR.
POST PLANTING TREATMENT	Cutworm (Darksided and White)	83	Ground application only	At transplanting. Cutworm activity is greatest during the late evening and night. Application of ZIVATA™ should be timed as close as possible to insect feeding activity.	Spray in a 25 cm band over the row using 150 to 300 L of water per hectare. Under conditions of severe insect pressure, application should be made to fence rows and to a 15 m wide strip into nearby cover crops. A follow-

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					<p>up treatment with another insecticide registered for this use may be necessary if there are late developing cutworms. DO NOT use more than 1 application per year. DO NOT apply within 60 days of harvest. DO NOT APPLY BY AIR.</p>
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OILSEED CROPS

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
CANOLA and MUSTARD	Crucifer Flea Beetle, Lygus Bug, Cabbage Seedpod Weevil (adults)	83	Ground	<p><i>For Cabbage Seedpod Weevil (adults):</i> 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. ZIVATA™ will not control larvae</p>	<p>To prevent migration of overwintering flea beetle adults throughout the field, ground-spray a 15 m strip around the field at the first sign of flea beetle feeding. Do not apply within 7 days of harvest. Do not use more than 3 applications per year. Allow a 7 day interval</p>
		83	Aerial		

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				developing within the pod, and must be applied prior to egg laying.	between treatments. <i>For cabbage seedpod weevil:</i> Do not make more than 1 application per season by either ground or aerial application equipment.
	Imported Cabbageworm, Diamondback Moth Larvae, Cabbage Looper, Bertha Armyworm	83	Ground	Apply when the insects are at a vulnerable stage (early larval instars). Consult provincial guidelines and local extension experts for treatment threshold and advice.	Aerial Application: Do not make more than 1 application of 83 mL/ha of the allowed seasonal total by air.
		83	Aerial		
	Grasshoppers	63-83	Ground	Apply the low rate when grasshoppers are up to the 3rd nymphal stage (up to 1 cm in length) or when insect numbers are low. Apply the high rate when grasshoppers are larger, up to but not including winged adults (up to 2.5 cm in length) or when insect numbers are high. If insect pressure is high apply a spray to a 15 m strip around the field. Avoid environmentally sensitive areas and unregistered crops.	
		83	Aerial		
SUNFLOWERS	Sunflower beetle	42-63	Ground	Apply when insects appear. Use the higher	Do not apply within 7 days of harvest. Do
		83	Aerial		

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				rate to control adults.	not use more than 3 applications per year. Allow a 7 day interval between treatments. Aerial Application: Do not make more than 1 application of 83 mL/ha of the allowed seasonal total by air.
FLAX	Grasshoppers	63-83 83	Ground Aerial	Apply the low rate when grasshoppers are up to the 3rd nymphal stage (up to 1 cm in length) or when insect numbers are low. Apply the high rate when grasshoppers are larger, up to but not including winged adults (up to 2.5 cm in length) or when insect numbers are high. If insect pressure is high apply a spray to a 15 m strip around the field. Avoid environmentally sensitive areas and unregistered crops.	Do not apply within 7 days of harvest. Do not use more than 3 applications per year. Allow a 7 day interval between treatments. Aerial Application: Do not make more than 1 application of 83 mL/ha of the allowed seasonal total by air.

CEREAL CROPS

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
WHEAT, BARLEY, OATS	Grasshoppers	63-83 83	Ground Aerial	Apply the low rate when grasshoppers are up to the 3rd nymphal stage (up to 1 cm in length) or when insect numbers are low. Apply the high rate when grasshoppers are larger, up to but not including winged adults (up to 2.5 cm in length) or when insect numbers are high. If insect pressure is high apply a spray to a 15 m strip around the field. Avoid environmentally sensitive areas and unregistered crops.	Do not apply within 28 days of harvest or 14 days of livestock foraging. Do not use more than 3 applications per year. Allow a 7 day interval between treatments. Aerial Application: Do not make more than 2 applications of 83 mL/ha of the allowed seasonal total by air.

Tank Mix with LADDER
ZIVATA™ can be tank mixed with Ladder® for one pass grasshopper and weed control in spring and durum wheat, if monitoring of grasshopper populations indicates application is necessary and timing is correct. Consult the Ladder label for rates and weeds controlled. **DO NOT APPLY BY AIR.**

Tank mix with Bison 400L® or Achieve® Liquid Herbicide
ZIVATA™ can be tank mixed with Bison 400L® or Achieve Liquid Herbicide for one pass grasshopper and wild oat control in spring wheat and spring barley, if monitoring of grasshopper populations indicates application is necessary and timing is correct. A reduction in control of green foxtail and yellow foxtail may be observed when ZIVATA™ is tank mixed with Bison™ 400L or Achieve Liquid Herbicide. Consult Bison 400L® or Achieve Liquid Herbicide labels for use instructions and rates. For ground application only. **DO NOT APPLY BY AIR.**

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OTHER USES

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
ALFALFA, UNIMPROVED PASTURE	Grasshoppers	63-83	Ground application	Apply the low rate when grasshoppers are up to the 3rd nymphal stage (up to 1 cm in length) or when insect numbers are low. Apply the high rate when grasshoppers are larger, up to but not including winged adults (up to 2.5 cm in length) or when insect numbers are high. If insect pressure is high apply a spray to a 15 m strip around the field. Avoid environmentally sensitive areas and unregistered crops.	Do not apply within 3 days of livestock foraging. Do not use more than 3 applications per year. Allow a 7 day interval between treatments. Alfalfa seed from treated crops is not to be used for production of 'alfalfa sprouts' for human consumption. Aerial Application: Do not make more than 1 application of 83 mL/ha of the allowed seasonal total by air.
		83	Aerial application		
ALFALFA	Alfalfa Weevil, Lygus Bug, Tarnished Plant Bug, Pea Aphid, Potato Leafhopper	83	Ground application only	Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.	

ALFALFA Rate Conversion Chart

Rate (mL/ha)	Hectares treated with 1 L products
42	23.8
63	15.9
83	12.0
104	9.6
125	8.0

MINOR USES

NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for this product for the use(s) described below were developed by persons other than ADAMA Agricultural Solutions Canada Ltd. (ADAMA) under the User Requested Minor Use Label Expansion program. For these uses, ADAMA has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label.

The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

DIRECTIONS FOR USE

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Bulb Vegetables (Crop Group 3: Garlic; Elephant Garlic; Leek; Dry Bulb, Green and Welch Onion; Shallots)	Onion Thrips	188	Ground application only	Foliar application by ground boom sprayer when the insect or damage appears. Thorough coverage and penetration of spray droplets into the leaf whorls, where most thrips are feeding and hiding, are essential for good control. Consult provincial guidelines and	Use 500 L/ha of water for thorough coverage. Do not apply within 14 days of harvest. Do not use more than 3 applications per year. Allow a 7 day interval between treatments. DO NOT APPLY BY AIR. FOR USE ON LEEKS IN

				<p>local extension experts for treatment threshold for different crops. For hand harvest and thinning green onions, DO NOT re-enter treated areas for 10 days after treatment. For all other activities, DO NOT re-enter treated areas until 24 hours after treatment. For all other crops, DO NOT re-enter treated areas until 24 hours after treatment. Workers should be given oral warning of the re-entry interval.</p>	<p>ONTARIO ONLY.</p>
Head Lettuce	Cabbage Looper, Tarnished Plant Bug, Darksided and White Cutworms	83	Ground application only	<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>Use 500 L/ha of water for thorough coverage. Do not apply within 3 days of harvest. Do not use more than 3 applications per year. Allow a 7 day interval between treatments. DO NOT APPLY BY AIR.</p>
Leaf Lettuce	Tarnished Plant Bug				
Choke Cherry shelterbelts	Prairie Tent Caterpillar, Ugly Nest Caterpillar,	58	Ground application only	<p><i>Prairie Tent Caterpillar:</i> Apply prior to flowering when tents are visible,</p>	<p>Apply as a foliar spray so leaves are wet but not dripping.</p>

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	Fruit tree Leafroller			generally mid to late May. <i>Ugly Nest Caterpillar:</i> Apply after flowering when tents are first visible, generally early to mid June. <i>Fruit tree Leafroller:</i> Apply after flowering when damage is first noted, generally early to mid June.	Do not use more than 1 application per year. Use 1000 L/ha of water for thorough coverage. DO NOT APPLY BY AIR.
BRASSICA LEAFY VEGETABLES					
Broccoli, Brussels Sprouts, Cabbage, Cauliflower	Swede Midge (<i>Contarinia nasturtii</i>)	83	Ground application only	Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring.	Do not apply within 1 day of harvesting cabbage and 3 days of harvesting broccoli, Brussels sprouts or cauliflower. Do not use more than 3 applications per crop per year (249 mL product/year). Allow at least a 7 day interval between treatments. Use sufficient water for thorough coverage, 100 to 200 L/ha by ground sprayer. DO NOT APPLY BY AIR.

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<p>Crop Subgroup 5A (Head and Stem Brassica Subgroup): Broccoli, Chinese broccoli (gai lan), Brussels sprouts, cabbage, Chinese cabbage (napa), Chinese cabbage, mustard (gai choy), cauliflower, covolo broccoli and kohlrabi</p>	<p>Onion Thrips</p>	<p>188</p>	<p>Ground application only</p>	<p>Apply when the insect first appears</p>	<p>Apply by foliar broadcast spray.</p> <p>DO NOT apply within 1 day for mechanical harvesting cabbage and 3 days for mechanical harvesting all other crops in Crop Group 5A.</p> <p>DO NOT apply within 6 days for hand harvesting all crops in Crop Group 5A.</p> <p>DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 days for scouting and 6 days for hand pruning, topping, irrigation, thinning and tying. An REI of 24 hours is required for all other activities.</p> <p>DO NOT apply more than 3 applications per growing season.</p> <p>Allow a 7 day interval between treatments.</p>
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					DO NOT APPLY BY AIR. Apply in sufficient water to ensure thorough coverage. A water volume of 500 L/ha is recommended
LEGUME VEGETABLES					
CROPS	PEST	RATE mL/Ha	APPLICATION METHOD	APPLICATION TIMING	NOTES
Soybean	Soybean aphids ¹	83-233	Ground application	The need and timing of application should be based on the presence of vulnerable pest developmental stages and significant populations as determine by local monitoring. ¹ For aphids, use the higher rate when conditions favour rapidly increasing aphid populations. Repeat sprays at 7 day intervals depending on the presence of significant populations as determined by local monitoring. Provincial soybean aphid management guidelines suggest applying insecticide during	Unless otherwise indicated, repeat sprays at 4 to 7 day intervals depending on the presence of significant populations as determined by local monitoring. DO NOT apply within 14 days of harvesting for edible podded peas, succulent shelled beans (including succulent fava beans), and succulent shelled peas. PHI 21 days for soybean, dry peas and dry beans (including lentils, lupins, chickpeas and dry fava beans).
	Pea Aphid ¹	83	Aerial application		
	Bean aphid ¹				
	Western bean cutworm ^{3,5}	83-187	Ground application		
		83	Aerial application		
	Grasshoppers Cutworms ³ Lygus bugs	83	Ground or aerial application		
BEANS, succulent and dry edible*	Bean Leaf beetle ²	83-233	Ground application		
		83	Aerial application		
	Soybean aphids ¹	83-233	Ground application		
	Pea Aphid ¹	83	Aerial application		
	Bean aphid ¹				
	Western bean cutworm ^{3,5}	83 - 187	Ground application		
	83	Aerial application			
Cutworms ³ Corn Borer ⁴ Potato Leaf Hopper Lygus bugs	83	Ground or aerial application			
Bean Leaf beetle ²	83-233	Ground application			
	83	Aerial application			

				<p>the flowering growth stage of soybean development.</p> <p>²For bean leaf beetle, use the higher rate to target higher pest populations or when conditions are conducive to bean pod mottle virus. Repeat sprays at 4 to 7 day intervals depending on the presence of significant populations as determined by local monitoring.</p> <p>³Cutworm activity is greatest during the late evening and night. Application should be timed as close as possible to insect feeding activity.</p> <p>⁴For Corn borer control, apply before the larva bores into the plant stalk or pods.</p> <p>⁵For western bean cutworm control repeat sprays at 4-7 day intervals. Consult local agricultural personnel and provincial guidelines on the</p>	<p>PHI 7 days for edible podded beans.</p> <p>DO NOT graze or harvest treated forage, straw or hay for livestock feed.</p> <p>DO NOT use more than 3 applications per season.</p> <p>Aerial application: Do not make more than 2 applications of 83 mL/ha of the allowed seasonal total by air.</p> <p>Water Volume: For ground application: 100 to 200 L/ha For aerial application: apply in minimum spray volume of 20 L/ha</p>
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				use of this product.	
* Beans, succulent and dry edible: Beans (<i>Phaseolus</i> spp.) (includes, runner bean, snap beans, wax beans, lima bean (green), field bean, kidney bean, navy bean, Pinto bean, tepary bean); bean (<i>Vigna</i> spp.) (includes asparagus bean, Chinese longbean, moth bean, yardlong bean, adzuki bean, mung bean, rice bean, urd bean; blackeyed pea, catjang, cowpea, southern pea, crowder pea); jackbean; sword bean; bean (<i>Lupinus</i> spp.) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin), lablab bean, guar.					
CROPS	PEST	RATE mL/Ha	APPLICATION METHOD	APPLICATION TIMING	NOTES
PEAS, succulent: Pea (<i>Pisum</i> spp.) (includes dwarf pea, edible-pod pea, snow pea, sugar snap pea, English pea, garden pea, green pea), pigeon pea	Soybean aphids ¹	83-233	Ground application	The need and timing of application should be based on the presence of vulnerable pest developmental stages and significant populations as determine by local monitoring. ¹ For aphids, use the higher rate when conditions favour rapidly increasing aphid populations. Repeat sprays at 7 day intervals depending on the presence of significant populations as determined by local monitoring. Provincial soybean aphid management guidelines suggest applying insecticide during the flowering growth stage of soybean development.	Unless otherwise indicated, repeat sprays at 4 to 7 day intervals depending on the presence of significant populations as determined by local monitoring. DO NOT apply within 14 days of harvesting for edible podded peas, succulent shelled beans (including succulent fava beans), and succulent shelled peas. PHI 21 days for soybean, dry peas and dry beans (including lentils, lupins, chickpeas and dry fava beans). PHI 7 days for edible podded beans. DO NOT use more than 3 applications per season.
	Pea Aphid ¹	83	Aerial application		
	Bean aphid ¹				
	Western bean cutworm ^{3,5}	83-187	Ground application		
	Cutworms ³	83	Aerial application		
	Potato Leaf Hopper	83	Ground or aerial application		
Peas Field	Bean Leaf beetle ²	83-233	Ground application		
		83	Aerial application		
	Soybean aphid ¹	83-233	Ground application		
	Pea Aphid ¹	83	Aerial application		
	Bean aphid ¹				
	Western bean cutworm ^{3,5}	83-187	Ground application		
PEAS, dry: Pea (<i>Pisum</i> spp.) (includes field pea), pigeon pea	Pea leaf weevil (<i>Sitona lineate</i>) ⁴	83	Ground or aerial application		
	Soybean aphids ¹	83-233	Ground application		
	Pea Aphid ¹	83	Aerial application		
	Bean aphid ¹				
	Western bean cutworm ^{3,5}	83-187	Ground application		
	Cutworms ³	83	Aerial application		
Grasshoppers	Cutworms ³	83	Ground or aerial application		
	Bean Leaf beetle ²	83-233	Ground application		

		83	Aerial application	<p>²For bean leaf beetle, use the higher rate to target higher pest populations or when conditions are conducive to bean pod mottle virus.</p> <p>³Cutworm activity is greatest during the late evening and night. Application should be timed as close as possible to insect feeding activity.</p> <p>⁴Make the first application after emergence but prior to the 5 to 6 node stage. Apply while the adults are still present on the plants, before egg laying begins.</p> <p>⁵For western bean cutworm control repeat sprays at 4-7day intervals. Consult local agricultural personnel and provincial guidelines on the use of this product.</p>	<p>Aerial Application: Do not make more than 2 applications of 83 mL/ha of the allowed seasonal total by air. DO NOT graze or harvest treated forage, straw or hay for livestock feed.</p> <p>Water Volume: For ground application: 100 to 200 L/ha For aerial application: apply in minimum spray volume of 20 L/ha</p>
<p>Tank Mix with Headline EC Fungicide (Pyraclostrobin 250 g/L) on Dry Field Peas: ZIVATA™ may be tank mixed with Headline EC Fungicide to control insects and diseases listed on the label of each product.</p>					

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Read carefully and follow all use directions and use precautions on both the ZIVATA™ and Headline EC Fungicide labels. Failure to follow the rates of use and timing of application as recommended for each product will result in unsatisfactory control of target pest.					
CROPS	PEST	RATE MI/Ha	APPLICATION METHOD	APPLICATION TIMING	NOTES
Favabeans (broad beans)	Soybean aphids ¹	83-233	Ground application	The need and timing of application should be based on the presence of vulnerable pest developmental stages and significant populations as determine by local monitoring. ¹ For aphids, use the higher rate when conditions favour rapidly increasing aphid populations. Repeat sprays at 7 day intervals depending on the presence of significant populations as determined by local monitoring. Provincial soybean aphid management guidelines suggest applying insecticide during the flowering growth stage of soybean development. ² For bean leaf beetle, use the higher rate to target higher pest populations or	Unless otherwise indicated, repeat sprays at 4 to 7 day intervals depending on the presence of significant populations as determined by local monitoring. DO NOT apply within 14 days of harvesting for edible podded peas, succulent shelled beans (including succulent fava beans), and succulent shelled peas. The preharvest interval is 21 days for soybean, dry peas and dry beans (including lentils, lupins, chickpeas and dry fava beans). The preharvest interval is 7 days for edible podded beans. DO NOT graze or harvest treated forage, straw or hay for livestock feed. Ground application: DO NOT use more
	Pea Aphid ¹ Bean aphid ¹	83	Aerial application		
	Western bean cutworm ^{3,4}	83-187	Ground application		
		83	Aerial application		
	Lygus bugs Potato Leafhopper	83	Ground or aerial application		
	Bean Leaf beetle ²	83-233	Ground application		
Chickpeas	Soybean aphids ¹	83-233	Ground application		
	Pea Aphid ¹ Bean aphid ¹	83	Aerial application		
	Western bean cutworm ^{3,4}	83-187	Ground application		
		83	Aerial application		
	Grasshoppers Potato Leaf hoppers Cutworms ³	83	Ground or aerial application		
	Bean Leaf beetle ²	83-233	Ground application		
Lentils	Soybean aphids ¹	83-233	Ground application		
	Pea Aphid ¹ Bean aphid ¹	83	Aerial application		
	Western bean cutworm ^{3,4}	83-187	Ground application		
		83	Aerial application		
	Grasshoppers Lygus Bugs Potato Leaf Hopper Cutworms ³	83	Ground or aerial application		

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				<p>when conditions are conducive to bean pod mottle virus.</p> <p>³Cutworm activity is greatest during the late evening and night. Application of ZIVATA™ should be timed as close as possible to insect feeding activity.</p> <p>⁴For western bean cutworm control repeat sprays at 4-7 day intervals. Consult local agricultural personnel and provincial guidelines on the use of this product.</p>	<p>than 3 applications per season.</p> <p>Aerial application: Do not make more than 2 applications of 83 mL/ha of the allowed seasonal total by air.</p> <p>Water Volume: For ground application: 100 to 200 L/ha. For aerial application: Apply in a minimum spray volume of 20 L/ha.</p>
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LETTUCE (Greenhouse only)

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Lettuce (greenhouse)	Cabbage loopers	83 mL /ha	Ground application only.	Apply when insects or damage first appear. For best results, apply against early developmental stages of the pest.	<p>DO NOT apply within 3 days of harvest.</p> <p>DO NOT use more than 2 applications per year.</p> <p>DO NOT APPLY BY AIR.</p> <p>Apply in sufficient water volume to ensure adequate coverage.</p>

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CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Ferns of Asparagus	European Asparagus Aphids	83 mL/ha	Ground application only.	Apply post-harvest to fern only. Reapply after 7-10 days if monitoring indicates further applications are required.	DO NOT apply more than 3 applications per season. 180 day Preharvest interval. DO NOT APPLY BY AIR

FIELD AND SWEET CORN

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Corn, Field and Sweet	Armyworm (<i>Pseudaletia unipuncta</i>)	83	Ground or aerial application	Spray no later than when first feeding damage is seen on foliage.	Repeat sprays at 4-7 day intervals depending on the presence of significant populations as determined by local monitoring.
Corn, Field, Sweet, Pop and Seed.	European corn borer (<i>Ostrinia nubilalis</i>) and Corn earworm (<i>Helicoverpa zea</i>)	187	Ground application or aerial application	Spray no later than when first feeding damage is seen on foliage. Where there are two generations, 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.	Ground Application: DO NOT apply more than 3 applications per hectare in total per season. Aerial Application: DO NOT apply more than 2 applications of the allowed seasonal total by air. <u>Ground Application:</u> Apply in 100 - 200 L of water per hectare. <u>Aerial Application:</u>

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					<p>Apply in 10 - 40 L of water per hectare.</p> <p>Sweet Corn: DO NOT apply within 1 day of harvest. Corn for Silage: DO NOT apply within 14 days of harvest. Field corn, popcorn and corn grown for seed: DO NOT apply within 21 days of harvest.</p>
TIMOTHY (grown for hay or seed)					
CROP	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Timothy (grown for hay or seed)	Grasshoppers	63 – 83 mL product/ha in 100 – 200 L/ha water	Ground application only.	<p>Apply the low rate when grasshoppers are up to the 3rd nymphal stage (up to 1 cm in length) or when insect numbers are low. Apply the high rate when grasshoppers are larger, up to but not including winged adults (up to 2.5 cm in length) or when insect numbers are high.</p> <p>If insect pressure is high apply a spray to a 15 m strip around the field.</p>	<p>DO NOT apply more than 3 applications per season.</p> <p>Allow 7 days between applications. DO NOT apply within 14 days of harvest.</p> <p>DO NOT APPLY BY AIR.</p> <p>Crops treated with ZIVATA™ may be fed to non-lactating dairy animals and other livestock following a 14 day interval from application to harvest or foraging.</p>

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				Avoid environmentally sensitive areas and unregistered crops.	
SWEET POTATO					
CROP	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Sweet Potato	Potato Flea Beetle Tuber Flea Beetle Potato Leafhopper	83	Ground only.	Timing of application should be based on the presence of vulnerable pest development stages and significant population as determined by local monitoring.	DO NOT apply more than 3 applications per year. Allow 7 days between applications. DO NOT apply within 7 days of harvest. DO NOT apply by air. Apply in a minimum of 100 L of water/ha.
CEREAL CROPS					
CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Wheat, Barley and Oats	Armyworm (<i>Pseudaletia unipuncta</i>)	83	Ground or aerial application.	Spray no later than when first feeding damage is seen on foliage.	Repeat sprays at 4-7 day intervals depending on the presence of significant populations as determined by local monitoring. DO NOT apply more than 3 applications per year. DO NOT apply more than 2 applications of 83 mL/ha of the allowed seasonal total by air.

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					<p>Ground Application: Apply in 100 - 200 L of water per hectare.</p> <p>Aerial Application: Apply in 10 - 40 L of water per hectare.</p> <p>DO NOT apply within 28 days of harvest.</p> <p>DO NOT apply within 14 days of livestock foraging.</p>
POTATOES					
CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Potatoes	Armyworm (<i>Pseudaletia unipuncta</i>)	83 83	Ground application. Aerial application.	Spray no later than when first feeding damage is seen on foliage.	<p>Repeat sprays at 4-7 day intervals depending on the presence of significant populations as determined by local monitoring.</p> <p>DO NOT apply more than 3 applications per year for ground.</p> <p>DO NOT apply more than 2 applications of 83 mL/ha of the allowed seasonal total by air.</p>

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					<p>Ground Application: Application: Apply in 100 - 200 L of water per hectare.</p> <p>Aerial Application: Apply in 10 - 40 L of water per hectare.</p> <p>DO NOT apply within 7 days of harvest.</p>
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CARROT

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Carrots	Carrot Rust Fly(<i>Psila rosae</i>) Carrot weevil (<i>Listronis oregonensis</i> _	83	Ground application.	First application should be applied at the 2-3 leaf stage when insects or damage appear. Timing of applications should be based on the presence of vulnerable pest developmental stages and significant populations as determined by local monitoring	Allow 7 days between applications. DO NOT apply within 7 days of harvest. DO NOT apply more than 3 applications per year. DO NOT APPLY BY AIR.

CANOLA

CROPS	PEST	RATE (mL/ha)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Canola	Swede midge (<i>Contarinia nasturtii</i>)	83	Ground or aerial application	Timing of applications should be based on the presence of vulnerable pest developmental stages and	Allow a 7 day interval between treatments. DO NOT apply within 7 days of harvest.

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				significant populations as determined by local monitoring.	<p>Ground Application: DO NOT use more than 3 applications per year.</p> <p>Aerial Application: DO NOT make more than 1 application of 83 mL/ha of the allowed seasonal total by air.</p> <p>Water Volume: Ground Application: Apply in 100 - 200 L of water per hectare. Aerial Application: Apply in 10 - 40 L of water per hectare.</p>
OUTDOOR ORNAMENTALS					
CROPS	PEST	RATE (mL/100 L)	APPLICATION METHOD	APPLICATION TIMING	NOTES
Outdoor Ornamentals	Black Vine Weevil adults	30	Ground	Apply when adult black vine weevils and feeding injury are first detected. Allow a 7 day interval between treatments.	<p>DO NOT APPLY BY AIR.</p> <p>Do apply more than three applications per year.</p> <p>Apply in sufficient water to ensure thorough coverage, to a maximum volume of 750 L/ha.</p>

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					Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 6 days for the post-application activity of cutting flowers.
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Do not use in residential areas. Residential areas are defined as any use site where by-standers including children could be exposed during or after application. This includes homes, schools, public buildings, or any other areas where the general public, including children, could be exposed.

Resistance-Management Recommendations

For resistance management, please note that ZIVATA™ contains a Group 3 insecticide. Any insect population may contain individuals naturally resistant to ZIVATA™ and other Group 3 insecticides. The resistant individuals may dominate the insect population if this group 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 ZIVATA™ or other Group 3 insecticides with different groups that control the same pests in a field.
- Use tank mixtures with insecticides from a different group that is effective on the target pest when such use is permitted.
- Insecticide use should be based on an IPM program that includes scouting, record keeping, and considers cultural, biological and other chemical control practices.
- Monitor treated pest populations for resistance development.
- 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 ADAMA Agricultural Solutions Canada Ltd. at 1-855-264-6262.

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