

2015-6782  
2018-07-18



Bayer CropScience

GROUP	4D	INSECTICIDE
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## **ALTUS Insecticide**

SOLUTION

For control of listed insect pests in greenhouse tomatoes, peppers, cucumbers, lettuce and ornamentals and in outdoor ornamentals

COMMERCIAL

ACTIVE INGREDIENT: Flupyradifurone.....200 g/L

REGISTRATION NUMBER 33176 PEST CONTROL PRODUCTS ACT

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

KEEP OUT OF EACH OF CHILDREN

POTENTIAL SKIN SENSITIZER

Bayer CropScience Inc.  
200-160 Quarry Park Blvd. SE  
Calgary, Alberta T2C 3G3

Product Information: 1-888-283-6847  
[www.bayeres.ca](http://www.bayeres.ca)

NET CONTENTS: 1 to 20 Litres

In case of spills, poisoning or fire, telephone emergency response number  
1-800-334-7577 (24 hours a day).

**PRECAUTIONS:** KEEP OUT OF REACH OF CHILDREN. Potential skin sensitizer. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

**DO NOT** enter or allow worker entry into treated greenhouses and outdoor nurseries during the restricted entry interval (REI) of 12 hours. For all other treated areas (such as residential areas, public gardens, etc.), do not enter or allow entry into treated areas until sprays have dried.

**DO NOT** apply with handheld fogging or misting equipment.

Apply only when the potential for drift to non-target areas of human habitation and areas of human activity is minimal, taking into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

**PROTECTIVE CLOTHING AND EQUIPMENT:** Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean up and repairs. Gloves are not required during application within a closed cab. Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. If this pest control product is to be used on a commodity that may be exported and you require information regarding Maximum Residue Limits for an importing country, please contact Bayer CropScience Canada Inc. at 1-888-283-6847 or [www.bayercropscience.ca](http://www.bayercropscience.ca).

**FIRST AID:** 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. 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 five 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 to 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.

**TOXICOLOGICAL INFORMATION:** No specific antidote is available. Treat the patient symptomatically.

**ENVIRONMENTAL PRECAUTIONS AND INFORMATION:** Toxic to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE. Toxic to adult bees in laboratory studies via oral exposure, however, not toxic to bees through contact exposure, and field studies conducted with this product have shown no effects on honeybee colony development. Minimize spray drift to reduce exposure to bees in habitats close to the application site. Application during the crop blooming period, and when flowering weeds are present may only be made in the early morning and the evening when most bees are not foraging. For greenhouse use, minimize potential risk to bees by avoiding application when bees are actively visiting the treatment area. 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 insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland. For greenhouse use, minimize potential risk to beneficial insects by avoiding application when beneficial insects are actively visiting the treatment area.

Flupyradifurone is persistent and may carryover. It is recommended that any products containing flupyradifurone not be used in areas treated with this product during the previous season.

Flupyradifurone and its transformation product difluoroacetic acid demonstrate the properties and characteristics associated with chemicals detected in ground water. The use of flupyradifurone in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination. To reduce runoff of flupyradifurone and its transformation product difluoroacetic acid 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 cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in a locked storage area.

**DISPOSAL:** 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:

- Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
- 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.

**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 cleanup of spills.

**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.



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## GENERAL INFORMATION

### Section 1: Notices

**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.

### Section 2: The Product

ALTUS Insecticide is intended for the control of insect pests in a wide variety of greenhouse vegetable and ornamental crops, and in outdoor nursery and landscape ornamentals. ALTUS Insecticide is a broad-spectrum insecticide that is acropetally systemic, moving from roots to the leaves in the case of soil applications. ALTUS Insecticide moves translaminarily through the leaf tissue in the case of foliar applications, and can provide control of pests on the underside of leaves. ALTUS Insecticide is readily absorbed into leaf tissue and is considered “rainfast” within 1 hour after spray dries.

## SAFETY AND HANDLING

### Section 3: Precautions, Protective Clothing and Equipment

#### PRECAUTIONS

#### KEEP OUT OF REACH OF CHILDREN

Potential skin sensitizer. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

**DO NOT** enter or allow worker entry into treated greenhouses and outdoor nurseries during the restricted entry interval (REI) of 12 hours. For all other treated areas (such as residential areas, public gardens, etc.), do not enter or allow entry into treated areas until sprays have dried.

**DO NOT** apply with handheld fogging or misting equipment.

Apply only when the potential for drift to non-target areas of human habitation and areas of human activity is minimal, taking into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

#### PROTECTIVE CLOTHING AND EQUIPMENT:

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean up and repairs. Gloves are not required during application within a closed cab.

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

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product.
- Wash the outside of gloves before removing.
- As soon as possible, wash thoroughly and change into clean clothing.

If this pest control product is to be used on a commodity that may be exported and you require information regarding Maximum Residue Limits for an importing country, please contact Bayer CropScience Canada Inc. at 1-888-283-6847 or [www.bayercropscience.ca](http://www.bayercropscience.ca).

### **Section 4: First Aid and Toxicological Information**

#### FIRST AID

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

If swallowed	<ul style="list-style-type: none"><li>• Call a poison control centre or doctor immediately for treatment advice.</li><li>• 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.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
If in eyes	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye.</li><li>• Call a poison control centre or doctor for treatment advice.</li></ul>
If on skin or clothing	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control centre or doctor for treatment advice.</li></ul>
If inhaled	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial</li></ul>



	respiration, preferably by mouth-to-mouth, if possible. <ul style="list-style-type: none"><li>• Call a poison control centre or doctor for further treatment advice.</li></ul>
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**TOXICOLOGICAL INFORMATION:**

No specific antidote is available. Treat the patient symptomatically.

<b>Section 5: Environmental Precautions and Information</b>
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Toxic to aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

Toxic to adult bees in laboratory studies via oral exposure, however, not toxic to bees through contact exposure, and field studies conducted with this product have shown no effects on honeybee colony development. Minimize spray drift to reduce exposure to bees in habitats close to the application site. Application during the crop blooming period, and when flowering weeds are present may only be made in the early morning and the evening when most bees are not foraging. For greenhouse use, minimize potential risk to bees by avoiding application when bees are actively visiting the treatment area. 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 insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland. For greenhouse use, minimize potential risk to beneficial insects by avoiding application when beneficial insects are actively visiting the treatment area.

Flupyradifurone is persistent and may carryover. It is recommended that any products containing flupyradifurone not be used in areas treated with this product during the previous season.

Flupyradifurone and its transformation product difluoroacetic acid demonstrate the properties and characteristics associated with chemicals detected in ground water. The use of flupyradifurone in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

To reduce runoff of flupyradifurone and its transformation product difluoroacetic acid 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.

## Section 6: Storage

Store in cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in a locked storage area.

## Section 7: Disposal

For Recyclable Containers: 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.

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 cleanup of spills.

## DIRECTIONS FOR USE

## Section 8: Crops, Pests, Application Rates and Methods

### GREENHOUSE CROPS:

FOLIAR APPLICATION			
Crop	Pests Controlled	Rate	Remarks
Greenhouse Tomatoes, Cucumbers*, Lettuce, Peppers	Aphids Leafhoppers	500 - 750 mL/ha	<ul style="list-style-type: none"><li>• Monitor crops and commence applications once local thresholds are reached.</li><li>• Thorough, uniform coverage of the crop is required for optimum control.</li><li>• Use the higher rate for higher pest infestation levels.</li><li>• Minimum application volume is 500 L/ha. Use appropriate spray volume</li></ul>
	Whiteflies	750 – 1000 mL/ha	

Greenhouse Ornamentals			<p>for adequate crop foliage spray coverage. Spray crop to wet not to drip.</p> <ul style="list-style-type: none"> <li>• Repeat applications may be made if necessary, providing the maximum amount of 2000 mL product/ha per crop cycle is not exceeded.</li> <li>• Minimum interval between applications: 7 days for tomatoes, cucumber, lettuce and ornamentals. 10 days for peppers.</li> <li>• Pre-Harvest Interval (PHI): 1 day for tomatoes, cucumber and lettuce. 3 days for peppers.</li> <li>• Maximum ALTUS Insecticide allowed per crop cycle: 2000 mL/ha (400 g ai/ha)</li> </ul>
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\*May cause some leaf yellowing and/or mottling.

<b>DRENCH APPLICATION</b>			
<b>Crop</b>	<b>Pests Controlled</b>	<b>Rate</b>	<b>Remarks</b>
Greenhouse Tomatoes, Peppers, Cucumbers*, Lettuce	Aphids  Leafhoppers	750 – 1000 mL/ha (7.5 – 10 mL / 100 m <sup>2</sup> )	<ul style="list-style-type: none"> <li>• Monitor crops and commence applications once local thresholds are reached.</li> <li>• Use the higher rate for higher pest infestation levels.</li> </ul>
Greenhouse Ornamentals: Herbaceous species, Woody perennials, trees and shrubs less than 1 m in height	Whiteflies	1500 – 2000 mL/ha (15 – 20 mL / 100 m <sup>2</sup> )	<ul style="list-style-type: none"> <li>•</li> <li>• To assure optimum effectiveness, the product must be placed where the roots of the plant can absorb the active ingredient. Application to soil or soilless media should be made with sufficient water to ensure incorporation into the root zone.</li> <li>• For applications to plants grown in soil or soilless media, follow with moderate irrigation. Irrigate carefully within the next 10 days in order to avoid loss of active ingredient due to</li> </ul>

			<p>leaching.</p> <ul style="list-style-type: none"> <li>• Re-apply only when monitoring indicates it is necessary, at a minimum interval of 7 days for tomatoes, cucumbers, lettuce and ornamentals and 10 days for peppers.”</li> <li>• Pre-Harvest Interval (PHI): 1 day for tomatoes, cucumber and lettuce. 3 days for peppers.</li> <li>• Maximum ALTUS Insecticide allowed per crop cycle: 2000 mL/ha (400 g ai/ha)</li> </ul>
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\*May cause some leaf yellowing and/or mottling.

#### OUTDOOR NURSERY AND LANDSCAPE ORNAMENTALS:

FOLIAR APPLICATION			
Crop	Pests Controlled	Rate	Remarks
Ornamental Plants including Flowers, Foliage Plants, Shrubs, Trees, and Groundcovers	Aphids Leafhoppers	500 - 750 mL/ha	<ul style="list-style-type: none"> <li>• Monitor crops and commence applications once local thresholds are reached.</li> <li>• Thorough, uniform coverage of the crop is required for optimum control.</li> <li>• Use the higher rate for higher pest infestation levels.</li> <li>• Minimum application volume is 500 L/ha. Use appropriate spray volume for adequate crop foliage spray coverage. Spray crop to wet not to drip.</li> <li>• Repeat applications may be made if necessary, providing the maximum amount of 2000 mL product/ha per year is not exceeded.</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum ALTUS Insecticide allowed</li> </ul>
	Whiteflies	750 – 1000 mL/ha	

			per year: 2000 mL/ha (400 g ai/ha)
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**CAUTION:** Due to the large number of species, varieties and cultivars of ornamental plants, it is impossible to test every plant species for tolerance to Altus Insecticide. The user should test a small number of plants for sensitivity before considering application to the entire crop. When testing a small number of plants, wait at least two weeks after application to determine sensitivity. Do not apply to the ornamental plants if any negative or adverse crop response is observed, or if a test for sensitivity was not conducted.

<b>Section 9: Application Instructions and Limitations</b>
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Do not make any foliar application of Altus Insecticide following a soil, in-furrow, or seed treatment application of a Group 4D Insecticide.

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 S572.1) fine 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.

Buffer zones:

Spot treatments using hand-held equipment **DO NOT** require a buffer zone. Use of low-clearance hooded or shielded sprayers that prevent spray contact with crop or foliage, and soil drench **DO NOT** require a buffer zone.

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 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	Outdoor ornamentals	1	1	1	1

Airblast	Outdoor ornamentals	Early growth stage	5	2	3	1
		Late growth stage	2	1	2	1

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.

The buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pest Management Regulatory Agency web site.

DO NOT allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

### **Section 10: Mixing Instructions**

If ALTUS Insecticide is to be tank mixed with other registered pesticides, compatibility should be tested prior to mixing.

When applied as a tank-mix combination, read and observe all label directions, including rates, restrictions, and grazing limitations for each product used in the tank-mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

#### **COMPATIBILITY**

When considering mixing ALTUS Insecticide with other registered pesticides, first contact your supplier for advice. For further information, contact your local Bayer CropScience Representative. If you have no experience with the combination you are considering, you should conduct a test to determine physical compatibility.

#### **ORDER-OF-MIXING**

The proper mixing procedure for ALTUS Insecticide alone or in tank mix combinations with other pesticides is:

- 1) Fill the spray tank 1/4 to 1/3 full with clean water;
- 2) While recirculating and with the agitator running, add any products in PVA bags (See Note\*). Allow time for thorough mixing;
- 3) Continue to fill spray tank with water until 1/2 full;
- 4) Add any wettable powder (WP), water dispersible granule (WG/WDG) products, or "flowable" (FL/SC) type products;
- 5) Allow enough time for thorough mixing of each product added to tank;
- 6) Add required amount of ALTUS Insecticide, and;

- 7) If applicable, add any remaining tank mix components: emulsifiable concentrates (EC), fertilizers and micronutrients.
- 8) Fill spray tank to desired level and maintain constant agitation to ensure uniformity of spray mixture.

\*NOTE: Do not use PVA packets in a tank mix with products that contain boron or release free chlorine. The resultant reaction of PVA and boron or free chlorine is a plastic that is not soluble in water or solvents.

## TANK MIX RECOMMENDATIONS

Do not tank mix with azole fungicides during bloom.

### **Section 11: Resistance Management Recommendations**

For resistance management, please note that ALTUS Insecticide contains a Group 4D insecticide. Any insect population may contain individuals naturally resistant to ALTUS Insecticide and other Group 4D insecticides. The resistant individuals may dominate the insect population if this group of insecticides is used repeatedly in the same sites. Other resistance mechanisms that are not linked to site of action, but 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 ALTUS Insecticide or other Group 4D insecticides with different groups that control the same pests.
- Insecticide use should be based on an IPM program that includes scouting and record keeping, and considers cultural, biological and other chemical control practices.
- Before spraying ALTUS Insecticide, correctly identify the pest and ensure economic and agronomic thresholds are met as recommended by local provincial or IPM specialists.
- 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 Bayer CropScience Inc. via internet at [www.bayercropscience.ca](http://www.bayercropscience.ca) or phone 1-888-283-6847.