



# Imidacloprid 2F Insecticide

FOR USE IN PEST MANAGEMENT OF LISTED INSECTS

**ACTIVE INGREDIENT:**

Imidacloprid, 1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine ..... 22.6%

**OTHER INGREDIENTS:** ..... 77.4%

**TOTAL:** ..... 100.0%

Contains 2 pounds Imidacloprid per gallon.

**STOP: READ THE LABEL BEFORE USE  
KEEP OUT OF REACH OF CHILDREN  
CAUTION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

**FIRST AID**

<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, and then give artificial respiration preferably by mouth-to mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

**HOT LINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For **MEDICAL Emergencies Call CHEMTREC** at telephone no. 1-800-424-9300.

**NOTE TO PHYSICIAN**

No specific antidote is available. Treat the patient symptomatically.

See Inside Booklet for Additional Precautions and Directions for Use

EPA Reg. No. 38167-36-5905

AD 021014

EPA Est. No. First Letters of Product Batch Code Indicate Producing Establishment:  
5905-GA-1=CG • 5905-IA-1=DI

NET CONTENTS:

Manufactured for  
HELENA CHEMICAL COMPANY  
225 Schilling Boulevard, Suite 300  
Collierville, TN 38017

**SHAKE WELL BEFORE EACH USE**  
**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**  
**CAUTION**

Harmful if inhaled. Harmful if swallowed. Avoid breathing spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or before using the toilet.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as, barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks

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

**ENGINEERING CONTROLS STATEMENT**

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**USER SAFETY RECOMMENDATIONS**

Users should:

- 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.

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues in blooming crops, plants or weeds. Do not apply this product or allow it to drift to blooming crops, plants or weeds if bees are foraging in the treatment area. This product is toxic to wildlife and highly toxic to aquatic invertebrates.

**PROTECTION OF POLLINATORS**



**APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.**



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

This product can kill bees and other insect pollinators.

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the

application site.

- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at:

<http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: [www.aapco.org/officials.html](http://www.aapco.org/officials.html). Pesticide incidents should also be reported to the National Pesticide Information Center at: [www.npic.orst.edu](http://www.npic.orst.edu) or directly to EPA at: [beekill@epa.gov](mailto:beekill@epa.gov).

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

**TAKE THE FOLLOWING PRECAUTIONS WHEN MIXING AND APPLYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES; RESERVOIRS; RIVERS; PERMANENT STREAMS, MARSHES OR NATURAL PONDS; ESTUARIES AND COMMERCIAL FISH FARM PONDS.**

#### **Spray Drift Management**

The applicator is responsible for considering the weather-related factors and the interaction of application equipment when making application decisions. Avoiding spray drift is the responsibility of the applicator.

#### **Importance of Droplet Size:**

An important factor influencing drift is droplet size. Small droplets (<150-200 microns) drift to a greater extent than large droplets. Within typical equipment specifications, make applications to deliver the largest droplets spectrum that provides sufficient control and coverage. Formation of very small droplets may be minimized by appropriate nozzle selection.

#### **Wind Speed Restrictions:**

Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size, canopy and equipment specifications determine drift potential at any given wind speed. Do not apply when winds are greater than 15 mph and avoid gusty and windless conditions. Risk of exposure to sensitive aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.

#### **Restrictions During Temperature Inversions**

Do not make ground applications during temperature inversions. Drift potential is high during temperature inversions. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however if fog is not present, inversions can also be identified by the movement of smoke from a ground source. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical mixing.

#### **Mixing and Loading Requirements**

Use properly designed and maintained containment pad for mixing and loading of any pesticide into application equipment. If containment pad is not used, maintain a minimum distance of 25 feet between mixing and loading area and potential surface to groundwater conduits such as field sumps, uncased well heads, sink-holes, or tiled drains.

#### **No-Spray Zone Requirements for Soil Applications**

Do not apply within 25 feet, of lakes; reservoirs; rivers; permanent streams, marshes or natural ponds; estuaries and commercial fish farm ponds.

#### **Runoff Management**

Do not cultivate within 10 feet of the aquatic area to allow growth of a vegetative filter strip. When using IMIDACLOPRID 2F INSECTICIDE on erodible soils, employ the best Management Practices for minimizing runoff. Consult your local Natural Resources Conservation Service for recommendations in your use area.

#### **Endangered Species Notice**

Under the Endangered Species Act, it is a Federal Offense to use any pesticide in a manner that results in the death of a member of an endangered species. Consult your local county bulletin, County Extension Agent, or Pesticide State Lead Agency for information concerning endangered species in your area.

#### **Resistance Management**

Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of this product should conform to resistance management strategies established for the use area.

This product contains a Group 4A insecticide. Insect biotypes with acquired or inherent resistance to Group 4A may eventually dominate the insect population if Group 4A insecticides are used repeatedly as the predominant method of control for targeted species.

The active ingredient in this product belongs to the neonicotinoid chemical class. Insect pests resistant to other chemical classes have not shown cross-resistance to this product. To maintain susceptibility to this class of chemistry in insect species with high resistance development potential: 1) Make only a single, soil application of this product each crop year; 2) Do not make foliar applications of products from this same class following a long residual, soil application of this product, or other neonicotinoid products.

*Examples of other Group 4A, neonicotinoid products used as foliar treatments include: Actara, Assail, Calypso, Centric, Clutch, Couraze, Gallant, Impulse, Intruder, Leverage, Pasada, Provado and Trimax Pro and Venom.*

*Examples of other Group 4A, neonicotinoid products used as soil treatments include: Admire, Admire Pro, Advise, Alias, Couraze, Cruiser, Gaucho, Macho, Macho Max, Platinum, Venom and Widow.*

Contact your local extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management instructions. Also, for more information on Insect Resistance Management (IRM), visit the Insecticide Resistance Committee (IRAC) on the web at <http://www.irac-online.org/>.

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

See individual crops for specific pollinator protection application restrictions. If none exist under the specific crop, for foliar applications, follow these application directions for crops that are contracted to have pollinator services or for food/feed & commercially grown ornamentals that are attractive to pollinators (and non-agricultural use sites):



##### FOR CROPS UNDER CONTRACTED POLLINATION SERVICES

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following condition has been met:

If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48-hours prior to the time of the planned application so that bees can be removed, covered or otherwise protected prior to spraying.



##### FOR FOOD/FEED CROPS AND COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55°F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48-hours prior to the time of planned application so that the bees can be removed, covered or otherwise protected prior to spraying.
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers or protected supervisors may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

*Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.*

**Exception:** If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material such as, barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks

#### APPLICATION DIRECTIONS SHAKE WELL BEFORE USING

Direct applications of IMIDACLOPRID 2F INSECTICIDE into the seed or root zone of crop. Failure to place this product into root zone may result in loss of control or delay in onset of activity. This product may be applied with ground or chemigation application. Do not apply with aerial application equipment. Broadcast, foliar applications to seedling flats or trays only, or where product is intended to be washed from foliage to soil prior to drying on foliage.

Optimum activity results from applications to the root zone of plants to be protected. The earlier this product is available to a developing plant, the earlier the protection begins. This product is continuously taken into the roots over a long period of time and the systemic nature of this product allows movement from roots through the xylem tissue to all vegetative parts of the plant. This results in extended residual activity, the control of insects and the prevention and/or reduction of virus transmission or symptom expression, and plant health benefits. The rate applied affects the length of the plant protection period. Use the higher rate within the labeled rate range when infestations occur later in crop development, or where pest pressure is continuous. This product will generally not control insects infesting flowers, blooms or fruit. Additional crop protection may be required for insects feeding in, or on these plant parts and for insects not listed in the crop-specific, pests controlled sections of this label.

Suppression or less than complete control of certain diseases and insect pests including reduced feeding may also result from applications of this product. Complete control of these pests/diseases may require supplemental control measures.

IMIDACLOPRID 2F INSECTICIDE use on crops grown for production of true seed intended for private or commercial planting is generally not allowed but may be allowed under State specific, 24(c) labeling. As with any insecticide take care to minimize exposure of the product to honey bees and other pollinators. Additional information on Imidacloprid 2F uses for these crops and other questions may be obtained from the Cooperative Extension Service, PCAs, consultants or local Helena Chemical Company representatives.

Premix this product with water or other appropriate diluent prior to application. Keep this product and water suspension agitated to avoid settling.

Do not apply more than 0.5 lb active ingredient per acre, per year, regardless of formulation or method of application, unless specified within a crop-specific Application Instructions section for a given crop.

#### SOIL APPLICATION USE DIRECTIONS

Direct applications of IMIDACLOPRID 2F INSECTICIDE into the seed or root zone. Lack of correct application of IMIDACLOPRID 2F INSECTICIDE into seed or root zone could result in lessened or delayed efficacy. Imidacloprid 2F may be applied with ground or chemigation application. Do not apply with aerial application equipment. Broadcast, foliar applications only to seedling flats or trays, or where product is intended to be washed from foliage to soil prior to drying on foliage.

Best results of IMIDACLOPRID 2F INSECTICIDE application are achieved when applications are made to the root zone of plants. Earlier applications of Imidacloprid 2F to developing plant results in earlier protection. IMIDACLOPRID 2F INSECTICIDE is a systemic insecticide and moves from the plant's root system to the upper vegetative parts via the xylem tissue. This movement results in extended activity of IMIDACLOPRID 2F INSECTICIDE to control insects that can vector detrimental virus transmission. Use the higher rate within the labeled rate range when insecticidal pressure occurs later in the plant's development cycle or when insecticide does not control insects that infest flowers, blooms or fruit. Insects attacking these parts of a plant generally require a foliar type insecticide application. More specific IMIDACLOPRID 2F INSECTICIDE application instructions are provided in the crop-specific sections of this label.

Suppression or less than complete control of certain diseases and insect pests including reduced feeding may also result from an IMIDACLOPRID 2F INSECTICIDE application. Complete control of these pests/diseases may require supplemental control measures.

Do not apply more than 0.5 lbs. active ingredient per acre, per year, regardless of formulation or method of application, unless specified within a crop-specific application section for a given crop.

## FOLIAR APPLICATION DIRECTIONS

DO Not Apply IMIDACLOPRID 2F INSECTICIDE in Enclosed Structures Such as Greenhouses or Planthouses.

Apply IMIDACLOPRID 2F INSECTICIDE as a directed or broadcast foliar spray. Thorough coverage of foliage without runoff is required for maximum insecticidal efficacy. Use of adequate spray volumes and correctly calibrated application equipment is critical. Use of a spray adjuvant may enhance thorough coverage. Lack of adequate coverage and retention of IMIDACLOPRID 2F INSECTICIDE on foliage and fruit can delay or lessen insect control. IMIDACLOPRID 2F INSECTICIDE may be applied with ground or aerial application equipment that has been properly calibrated.

Minimum spray volumes (unless otherwise specified in crop sections) are:

- 10 gallons/Acre by ground application
- 5 gallons/Acre through aerial equipment

IMIDACLOPRID 2F INSECTICIDE may also be applied by overhead chemigation (see CHEMIGATION – DIRECTIONS FOR USE section below) if allowed in crop specific section.

IMIDACLOPRID 2F INSECTICIDE application to crops grown for production of true seed intended for private or commercial planting may be allowed under State specific 24(c) labeling. Take extreme caution to minimize exposure of IMIDACLOPRID 2F INSECTICIDE to honey bees and other pollinators. Do not use IMIDACLOPRID 2F INSECTICIDE on crops requiring bee pollination during bloom and a minimum of 10 days prior to bloom. Additional information on IMIDACLOPRID 2F INSECTICIDE uses for these crops and other questions may be obtained from the Cooperative Extension Service, PCAs, consultants or local Helena Chemical Company representatives.

Do not apply more than 0.5 lb. active ingredient per acre, per year, regardless of formulation or method of application, unless specified within a crop specific applications section for a given crop.

## MIXING INSTRUCTIONS FOR SOIL AND FOLIAR APPLICATIONS

1. Add 50% of the required amount of water to the spray tank
2. Begin agitation
3. Add labeled rate of IMIDACLOPRID 2F INSECTICIDE
4. Add balance of water needed

Maintain sufficient agitation during both mixing and application. IMIDACLOPRID 2F INSECTICIDE may be tank mixed with other pesticides and/or fertilizer solutions. Refer to Compatibility Note below. When tank mixing IMIDACLOPRID 2F INSECTICIDE with other pesticides, spray the tank mixture as directed above and follow the Mixing Order below.

### Mixing Order for Tank Mixes

1. Wettable powders
2. IMIDACLOPRID 2F INSECTICIDE, or other flowables second
3. Emulsifiable concentrates

Maintain good agitation as each pesticide is added. Do not add the next product until the previous is thoroughly mixed. If a fertilizer solution is added, a fertilizer pesticide compatibility agent may be needed. Maintain constant agitation during both mixing and application to ensure uniformity of spray mixture.

### Compatibility Note

Unless the applicator has prior knowledge of the compatibility of the intended tank mixture, Helena Chemical Company recommends a small scale test by adding proportionate amounts of each ingredient in the appropriate order, to a clean pint or quart sized jar. Cap and shake for 5 minutes, then let set for 5 minutes. Do not use any visual mixture indicating poor mixing or formation of precipitates that cannot be easily re-dispersed.

## CHEMIGATION – DIRECTIONS FOR USE

### Types of Irrigation Systems

Chemigation applications of IMIDACLOPRID 2F INSECTICIDE may only be made to crops through chemigation systems as specified in crop-specific Application sections and only through low-pressure systems unless specifically stated for a given crop. Do not apply IMIDACLOPRID 2F INSECTICIDE through any other type of irrigation system.

### Uniform Water Distribution and System Calibration

The irrigation system must provide uniform distribution of treated water. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

## Chemigation Monitoring

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

## Drift

Do not apply when wind speed favors drift beyond the area intended for treatment.

## Required System Safety Devices

The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located in the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

## Using Water from Public Water Systems

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional automatic quick-closing check valve to prevent the flow of fluid back toward the injection. The pesticide injection pipeline must contain a functional normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdraw from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

### ROTATIONAL CROPS \*

Treated areas may be replanted with any crop specified on an Imidacloprid label, or any crop for which a tolerance exists for the active ingredient, as soon as practical following the last application. For crops not listed on an Imidacloprid label, or for crops for which no tolerances for the active ingredient have been established, a 12-month plant-back interval is required.

#### IMMEDIATE PLANT-BACK:

All crops on this label plus the following crops not on this label: barely, canola, corn (field, pop & sweet), rapeseed, sorghum, sugar beet and wheat.

#### 30-DAY PLANT-BACK

Cereals (including buckwheat, millet, oats, rice, rye, and triticale), soybeans and safflower

#### 10-MONTH PLANT-BACK

Onion and bulb vegetables

#### 12-MONTH PLANT-BACK

All Other Crops

\* Cover crops for soil building or erosion control may be planted any time, but do not graze or harvest for food or feed.

### FIELD CROPS Application Rates

#### COTTON (Soil Application)

Pests Controlled	Rate fluid ounces/1,000 row-feet	Rate fluid ounces/Acre
Cotton aphid Plant bugs Thrips Whiteflies	1.3	17.0-21.1 (Depending on row-spacing)
Restrictions:		

Maximum amount allowed per year: 21.1 fluid ounces/Acre (0.33 lb ai/acre)

Regardless of formulation or method of application, apply no more than 0.5 lb active ingredient per acre per year, including seed treatment such as Gaucho®, soil and foliar uses. Do not apply more than a total of 6 applications of the active ingredient per year. Do not graze treated fields after any application of this product. Please see Resistance Management section of this label.

**Applications:**

Apply specified dosage of IMIDACLOPRID 2F INSECTICIDE in one of the following methods:

1. In-furrow spray during planting directed on or below seed;
2. In a narrow band directly below the eventual seed row in a bedding operation 7 or fewer days before planting;
3. Chemigation into root zone through low-pressure drip or trickle irrigation.

**COTTON (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Cotton aphids Flea hoppers Banded-winged whitefly Plant bugs (east of Rocky Mountains) Green stink bug Southern stink bug Bollworm/Budworm (ovicidal effect)	2.0-4.0
<b>Pests Suppressed</b>	
Lygus bugs (west of Rocky Mountains) Whiteflies (other than banded-winged whitefly)	3.0-4.0
<b>Restrictions:</b>	
<ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum amount allowed per year: 20.0 fluid ounces/Acre (0.31 lb AI/Acre)</li> <li>• Maximum number of applications per year: 6</li> <li>• Do not graze treated fields after any application.</li> </ul>	
<b>Applications:</b>	
Apply as foliar spray at specified rate per acre when insect pressure reaches economic threshold. Uniform coverage is required to achieve best control and a spray adjuvant may help improve coverage. Two applications may be required to achieve control when initial insect population is high. Base retreatment on field scout reports. IMIDACLOPRID 2F INSECTICIDE may be tank mixed with other labeled insecticides to increase control or control pests not controlled by imidacloprid. Apply only through properly calibrated ground, aerial or chemigation application equipment ensuring thorough coverage.	

**PEANUT<sup>1</sup> (Soil Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Whiteflies	16.0-24.0
<b>Pests Suppressed</b>	
Thrips	16.0-24.0
<b>Restrictions:</b>	
<ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb AI/Acre)</li> </ul>	
<b>Important Note:</b>	
Increases in Tomato spotted wilt virus (TSWV) incidence have been observed with applications of Imidacloprid 2F Insecticide on multiple varieties of peanut. This may also be the case with other tospoviruses, or other viruses transmitted by various thrips species or perhaps, other pests. Prior to applying the product to peanuts, Helena Chemical recommends consultation with the State, Cooperative Extension Service, or Helena Chemical's representative for application rates and timings. Growers are advised to weigh insect control benefits against potential increase in viral disease levels. In areas where TSWV or other tospovirus are endemic, growers are encouraged to use virus-resistant varieties and consult the University of Georgia, Tomato spotted wilt virus index, before applying this product.	
<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

**PEANUT<sup>1</sup> (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Whiteflies	2.8
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Minimum interval between applications: 5 days</li> <li>• Maximum amount allowed per year: 8.4 fluid ounces/Acre (0.13 lb AI/Acre)</li> </ul> <sup>1</sup> Use not permitted in California unless otherwise directed by-24(c) labeling.	

**POTATO (Soil Application)**

Pests Controlled	Rate fluid ounces/1,000 row-feet	Rate fluid ounces/Acre
Aphids Colorado potato beetle Flea beetles Leafhoppers Potato psyllid	0.9-1.3	13.0-20.0
<b>Pests / Diseases Suppressed</b>		
Symptoms of: Potato leaf roll virus (PLRV) Potato yellows Net necrosis (PLRV) Wireworms (with in-furrow spray at-planting)	0.9-1.3	13.0-20.0
<b>Restriction:</b> Maximum amount allowed per year: 20.0 fluid ounces/Acre (0.31 lb AI/Acre) <b>Applications:</b> Apply specified dosage of IMIDACLOPRID 2F INSECTICIDE in one of the following methods: <ol style="list-style-type: none"> <li>1. In-furrow spray during planting directed on seed pieces or seed potatoes;</li> <li>2. Subsurface side-dress on both sides of the row covered with 3 or more inches of soil;</li> <li>3. Narrow band spray at ground cracking directly over the row during hilling covered with 3 or more inches of soil;</li> <li>4. Narrow band directly below the eventual seed row in a bedding operation 7 or fewer days before planting. For effective pest control or suppression, IMIDACLOPRID 2F INSECTICIDE must be placed below soil surface and in contact with seed piece or within root zone. For potatoes grown on highly permeable soils with shallow water table, at-plant applications of this product may be made in a 2- to 4-inch band (width of planter shoe opening) and completely covered.</li> </ol>		

**POTATO (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Colorado potato beetle Flea beetles Leafhoppers Psyllids	3.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum IMIDACLOPRID 2F INSECTICIDE allowed per year: 12.1 fluid ounces/Acre (0.19 lb. AI/Acre)</li> </ul> <b>Applications:</b> Apply as a broadcast or directed spray to infested area. Apply only through properly calibrated ground, aerial or chemigation application equipment ensuring thorough coverage.	

POTATO<sup>1,2</sup>

(Seed Piece Treatment)

Pests Controlled	Rate fluid ounces/1,000 row-feet	Rate fluid ounces/Acre
Aphids Colorado potato beetle Flea beetles Leafhoppers Potato psyllid Wireworms (seed-piece protection)	0.4-0.8	8.0-16.0
<b>Pests / Diseases Suppressed</b>		
Symptoms of: Potato leaf roll virus (PLRV) Potato yellows Net necrosis (PLRV)	0.8	16.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Maximum amount allowed per year: 20.0 fluid ounces/Acre (0.31 lb AI/Acre)</li> <li>Do not use treated seed pieces for food, feed, or fodder.</li> <li>Do not apply any subsequent application of this product (in-furrow), and other Imidacloprid products following a seed piece treatment of this product.</li> </ul> <b>Applications:</b> Apply specified dosage as a diluted spray onto seed-pieces using a shielded spray system. Dilute with 3 parts water, or less, to 1 part this product. Agitate or stir spray solution as needed. Fungicidal or inert absorbent dusts may be applied after this product's application. Apply only in areas with adequate ventilation or in areas that are equipped to remove spray mist or dust. Plant seed pieces as soon as possible after treating avoiding prolonged exposure of seed pieces treated with this product to sunlight and in accordance with the recommendation of your local Extension specialist. Consult your local Helena Chemical representative or crop protection product dealer for information relevant to your area. <sup>1</sup> Based on a seeding rate of 2,000 lbs/acre. <sup>2</sup> Use not permitted in CA unless otherwise directed by 24(c) labeling.		

SOYBEAN<sup>1</sup> (Foliar Application)

Pests Controlled	Rate fluid ounces/Acre
Aphids Bean leaf beetle Cucumber beetles / Rootworm adults Japanese beetle (adults) Leafhoppers Whiteflies	3.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Pre-Harvest Interval (PHI): 21 days</li> <li>Minimum interval between applications: 7 days</li> <li>Maximum IMIDACLOPRID 2F INSECTICIDE allowed per year: 8.96 fluid ounces/Acre (0.14 lb. AI/Acre)</li> </ul> <sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

TOBACCO (Soil Application)

Pests Controlled	Rate fluid ounces/1,000 plants (as seeding tray drench)	Rate fluid ounces/1,000 plants (in-furrow or transplant-water)
Aphids Flea beetles	1.0	1.4
Mole crickets Whiteflies Wireworms	1.4-2.8	1.8-2.8
<b>Pests / Diseases Suppressed</b>		
Cutworms Symptoms of:	1.4-2.8	1.8-2.8

Tomato spotted wilt virus (TSWV)		
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Maximum amount allowed per crop year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Uniform, broadcast foliar spray to seedlings in trays (tray drench) not more than 7 days prior to transplanting followed immediately by overhead irrigation to wash this product from foliage into potting media. Failure to wash this product from foliage may result in a reduction in pest control. Transplants should be handled carefully during setting to avoid dislodging treated potting media from roots.</li> <li>2. In-furrow spray or transplant-water drench during setting.</li> <li>3. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.</li> </ol> <b>Important Note:</b> Proper tray drench applications of this product have been shown to be the most efficacious method of application. However, the specified rate of this product may be applied as combination of the tray drench in the planthouse and/or transplant-water drench in field. Adverse growing conditions may cause a delay in uptake of this product into the plant and a delay in control.		

#### TOBACCO (Foliar Application)

Pests Controlled	Rate fluid ounces/Acre
Aphids	1.6-3.2
Flea beetles Japanese beetles	3.2
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum IMIDACLOPRID 2F INSECTICIDE allowed per year: 17.9 fluid ounces/Acre (0.28 lb. AI/Acre)</li> </ul> <b>Applications:</b> Apply as a broadcast or directed spray to infested area. Use the higher rate within the labeled rate range when insect pressure is heavy. Apply only through properly calibrated ground, aerial or chemigation application equipment ensuring thorough coverage.	

### VEGETABLE AND SMALL FRUIT CROPS

#### Application Rates

#### CUCURBIT VEGETABLES<sup>1</sup>

Crops of Crop Group 9: Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cuban pumpkin, Cucumber, Gherkin, Gourd (edible, includes hyotan, cucuzza, hechima, Chinese okra), *Momordica* spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), Muskmelon (hybrids and/or cultivars of *Cucumis melo* including true cantaloupe, cantaloupe, casaba, Crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, snake melon and Winter melon), Pumpkin, Squash (includes summer squash types such as: butternut squash, calabaza, crookneck squash, Hubbard squash, scallop squash, straightneck squash, vegetable marrow and zucchini, and winter squash types such as acorn squash and spaghetti squash), Watermelon (includes hybrids and/or varieties of *Citrullus lanatus*)

Field application rates. See details that follow for additional planthouse use instructions.	
Pests Controlled	Rate fluid ounces/Acre
Aphids Cucumber beetles Leafhoppers Thrips (foliage-feeding thrips only) Whiteflies	16.0-24.0
<b>Pests / Diseases Suppressed</b>	
Bacterial wilt (as vectored by various cucumber beetles) Leaf silvering resulting from whitefly feeding	16.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 21 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb AI/Acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods:	

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equipment;
2. In-furrow spray directed on or below seed;
3. Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application;
4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting;
5. Post-seeding drench, transplant-water drench, or hill drench;
6. Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.

**Planthouse Application Rates**

Pests Controlled	Rate fluid ounces/1,000 plants
Aphids Whiteflies	0.1

**Restrictions:**

- Maximum amount applied in the planthouse: 0.1 fluid ounces (0.00156 lb ai) /1,000 plants
- Maximum number of applications in planthouse: 1

**Applications:**

Apply specified dosage to seedlings in trays in the planthouse, targeting soil media (tray drench), not more than 7 days prior to transplanting, in one of the following manners:

1. Uniform, broadcast high-volume foliar spray, followed immediately by sufficient overhead irrigation to wash this product from foliage into potting media without loss of gravitational liquid from the bottom of the tray. Failure to wash this product from foliage may result in reduced pest control;
2. Injection into overhead irrigation system, using adequate volume to thoroughly saturate soil media without loss of gravitational solution from the bottom of the tray.

The application made in the planthouse is not intended as a substitution for a field application. An additional field application must be made within 2 weeks following transplanting to provide continuous protection. Applications of higher rates or increased number of applications in planthouse may result in significant plant injury. Carefully handle transplants during setting to avoid dislodging treated potting media from roots.

**Important Note:** Not all varieties of cucurbit vegetables have been tested for tolerance to this product applied to seedling flats. It is therefore recommended to treat a small number of plants and confirm tolerance for 7 days prior to treating entire planthouse.

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

**GREENHOUSE VEGETABLES<sup>1</sup> (Soil Application Only)**

(Mature plants in production greenhouses)

Cucumber, Tomato Only

Pests Controlled	Rate fluid ounces/1,000 plants
Aphids Whiteflies	1.4

**Restrictions:**

- Pre-Harvest Interval (PHI): 0 days
- Maximum number allowed per year: 1

**Applications:**

Apply specified dosage in a minimum of 16 gallons of water for tomatoes and 21 gallons of water for cucumbers using soil drenches, micro-irrigation, drip irrigation, or hand-held or motorized calibrated irrigation equipment. Make application only to plants grown in field-type soils, potting media, or mixtures thereof. Do not apply to plants grown in non-soil medias such as perlite, vermiculite, rock wool or other soil-less media, or plants growing hydroponically. Do not apply to immature plants since phytotoxicity may occur.

Make applications when infestation pressure surpasses threshold and beneficials are not able to maintain pest populations below damage thresholds. Repellency of bumble bee pollinators and negative effects on some beneficials (*Orius sp.*) can occur when IMIDACLOPRID 2F INSECTICIDE is applied.

Many varieties of vegetables have been tested for tolerance to this product and show good safety. However, certain varieties may show more sensitivity to this product. Therefore, treatment of a few plants is recommended before treating the whole greenhouse.

<sup>1</sup> Not for use on crops grown for seed unless allowed by State-specific 24(c) labeling.

**FRUITING VEGETABLES<sup>1</sup> (Soil Application)**

Crops of Crop Group 8 plus Okra including: Eggplant, Ground cherry, Okra, Pepper (including bell, chili, cooking, pimento and sweet) Tomato, Pepinos, Tomatillo

Field application rates. See details that follow for additional planthouse instructions.

Pests Controlled	Rate fluid ounces/Acre
Aphids	Okra and Pepper

Colorado potato beetle Flea beetles Leafhoppers Thrips (foliage-feeding thrips only) Whiteflies	16.0-32.0  All Other Crops 16.0-24.0
<b>Pests / Diseases Suppressed</b>	
Symptoms of: Tomato mottle virus Tomato spotted wilt virus Tomato yellow leaf curl virus	Okra and Pepper 16.0-32.0 All Other Crops 16.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Pre-Harvest Interval (PHI): 21 days</li> <li>Maximum amount allowed on pepper and okra crops per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> <li>Maximum amount allowed on other fruiting vegetable crops per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equipment;</li> <li>In-furrow spray directed on or below seed;</li> <li>Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation with 24 hours of application;</li> <li>Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting;</li> <li>Post-seeding drench, transplant-water drench, or hill drench;</li> <li>Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.</li> </ol> <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.	
<b>Planthouse Application<sup>1</sup></b>	
<b>Pests Controlled</b>	<b>Rate fluid ounces/1,000 plants</b>
Aphids Whiteflies	0.1
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Maximum amount applied in the planthouse: 0.1 fluid ounces (0.00156 lb ai /1,000 plants)</li> <li>Maximum number of applications in planthouse: 1</li> </ul> <b>Applications:</b> Apply specified dosage to seedlings in trays in the planthouse, targeting soil media (tray drench), not more than 7 days prior to transplanting, in one of the following manners: <ol style="list-style-type: none"> <li>Uniform, broadcast high-volume foliar spray, followed immediately by sufficient overhead irrigation to wash this product from foliage into potting media without loss of gravitational liquid from the bottom of the tray. Failure to wash this product from foliage may result in reduced pest control;</li> <li>Injection into overhead irrigation system, using adequate volume to thoroughly saturate soil media without loss of gravitational solution from the bottom of the tray.</li> </ol> The application made in the planthouse is not intended as a substitution for a field application. An additional field application must be made within 2 weeks following transplanting to provide continuous protection. Applications of higher rates or increased number of applications in planthouse may result in significant plant injury. Handle transplants carefully during setting to avoid dislodging treated potting media from roots. <b>Important Note:</b> Not all varieties of cucurbit vegetables have been tested for tolerance to this product applied to seedling flats. It is therefore recommended to treat a small number of plants and confirm tolerance for 7 days prior to treating entire planthouse. <sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

#### FRUITING VEGETABLES<sup>1</sup> (Foliar Application)

Crops of Crop Group 8 plus Okra including: Eggplant, Ground cherry, Okra, Pepper (including bell, chili, cooking, pimento and sweet) Tomato, Pepinos, Tomatillo

<b>Pests Controlled</b>	<b>Rate fluid ounces/Acre</b>
Aphids Colorado potato beetle Leafhoppers Whiteflies	2.5-5.0
Pepper weevil (peppers only)	5.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Pre-Harvest Interval (PHI): 0 days</li> </ul>	

- Minimum interval between applications: 5 days
- Maximum IMIDACLOPRID 2F INSECTICIDE allowed per year: 15.2 fluid ounces/Acre (0.24 lb. AI/Acre)

**Applications:**

Applications of IMIDACLOPRID 2F INSECTICIDE must be part of a full-season resistance management program that uses alternate application products from multiple classes of chemistry and different modes of action.

For pepper weevil, apply specified dosage of IMIDACLOPRID 2F INSECTICIDE by ground equipment only, timing applications prior to a damaging population becoming established. Good coverage of foliage and fruit is necessary for optimum control. Make applications prior to a damaging population becoming established.

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

**GLOBE ARTICHOKE<sup>1</sup> (Soil Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers	16.0-32.0

**Restrictions:**

- Pre-Harvest Interval (PHI): 7 days
- Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)

**Applications:**

Apply specified dosage in one of the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;
2. In-furrow spray at planting directed on or below seed

<sup>1</sup>Use not permitted in California unless otherwise directed by 24(c) labeling.

**GLOBE ARTICHOKE (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers	3.2-8.0

**Restrictions:**

- Pre-Harvest Interval (PHI): 7 days
- Minimum interval between applications: 14 days
- Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)

**Applications:**

Use the higher rate within the labeled range when pest pressure is more severe.

**HERBS (Soil Application)**

Crops of Crop Subgroup 19A: Angelica, Balm (lemon balm), Basil (fresh and dried), Borage, Burnet, Camomile, Catnip, Chervil (dried), Chinese chive, Chive, Clary, Coriander (cilantro or Chinese parsley leaves), Costmary, Culantro (leaf), Curry (leaf), Dillweed, Horehound, Hyssop, Lavender, Lemongrass, Lovage (leaf), Marigold, Marjoram, Nasturtium, Parsley (dried), Pennyroyal, Rosemary, Rue, Sage, Savory (summer and winter), Sweet bay (bay leaf), Tansy, Tarragon, Thyme, Wintergreen, Woodruff, Wormwood.

Pests Controlled	Rate fluid ounces/Acre
Aphids Flea Beetles Leafhoppers Whiteflies	16.0-24.0

**Pests Suppressed**

Thrips (foliage-feeding thrips only)	16.0-24.0
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**Restrictions:**

- Pre-Harvest Interval (PHI): 14 days
- Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)

**Applications:**

Apply specified dosage in one of the following methods:

1. In-furrow spray at planting directed on or below seed;
2. In-furrow spray or transplant-water drench during setting or transplanting;
3. Shanked into or below eventual seed line;

4. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.

Notes: Not all crops and/or varieties listed above have been tested for phytotoxic effects. Without specific knowledge about a particular crop and variety, Helena Chemical strongly recommends that only small areas or numbers of plants of each be treated and evaluated prior to commercial use.

#### HERBS (Foliar Application)

Crops of Crop Subgroup 19A: Angelica, Balm (lemon balm), Basil (fresh and dried), Borage, Burnet, Camomile, Catnip, Chervil (dried), Chinese chive, Chive, Clary, Coriander (cilantro or Chinese parsley leaves), Costmary, Culantro (leaf), Curry (leaf), Dillweed, Horehound, Hyssop, Lavender, Lemongrass, Lovage (leaf), Marigold, Marjoram, Nasturtium, Parsley (dried), Pennyroyal, Rosemary, Rue, Sage, Savory (summer and winter), Sweet bay (bay leaf), Tansy, Tarragon, Thyme, Wintergreen, Woodruff, Wormwood

Pests Controlled	Rate fluid ounces/Acre
Aphids Flea Beetles Leafhoppers Whiteflies	2.8
<b>Notes and Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 5 days</li> <li>• Maximum amount allowed per year: 8.4 fluid ounces/Acre (0.13 lb AI/Acre)</li> </ul>	

#### HEAD AND STEM BRASSICA VEGETABLES<sup>1</sup> (Soil Application)

Crops of Crop Group 5: Broccoli, Broccoli raab (*rapin*), Brussels sprouts, Cabbage, Cauliflower, Cavalo broccoli, Chinese (*gai lon*) broccoli, Chinese (*bok choy*) cabbage, Chinese (*napa*) cabbage, Chinese mustard (*gai choy*) cabbage, Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens

Pests Controlled	Rate fluid ounces/Acre (on 36 inch rows)
Aphids Whiteflies	10.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 21 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>2. In-furrow spray directed on or below seed;</li> <li>3. Narrow (2 inches or less) surface band spray over seed-line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application;</li> <li>4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting;</li> <li>5. Post-seeding drench, transplant-water drench, or hill drench;</li> <li>6. Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.</li> </ol> <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.	

#### HEAD AND STEM BRASSICA VEGETABLES<sup>1, 2</sup> (Foliar Application)

Crops of Crop Group 5: Broccoli, Broccoli raab (*rapin*), Brussels sprouts, Cabbage, Cauliflower, Cavalo broccoli, Chinese (*gai lon*) broccoli, Chinese (*bok choy*) cabbage, Chinese (*napa*) cabbage, Chinese mustard (*gai choy*) cabbage, Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens

Pests Controlled	Rate fluid ounces/Acre (on 36 inch rows)
Aphids Flea beetles Leafhoppers Whiteflies	3.0
<b>Notes and Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 5 days</li> </ul>	

- Maximum amount allowed per year: 15.2 fluid ounces/Acre (0.24 lb AI/Acre)

**Applications:**

Apply specified dosage in one of the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment
2. In-furrow spray directed on or below seed
3. Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application
4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting
5. Post-seeding drench, transplant-water drench, or hill drench
6. Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

<sup>2</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.

**LEAFY GREEN VEGETABLES<sup>1</sup> (Soil Application)**

Crops of Crop Group 4A: Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (Roquette), Chervil, Chrysanthemum (edible leaved and garland), Corn salad, Cress (garden), Cress (upland, yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Radicchio (red chicory), Spinach (including New Zealand and vine (Malabar spinach, Indian spinach)), Watercress (commercial production only, applications must not be native cress growing in streams or other bodies of water), Watercress (upland)

Pests Controlled	Rate fluid ounces/Acre (on 36 inch rows)
Aphids Whiteflies	10.0-24.0

**Restrictions:**

- Pre-Harvest Interval (PHI): 21 days
- Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)

**Applications:**

Apply specified dosage in one of the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;
2. In-furrow spray directed on or below seed;
3. Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application;
4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting;
5. Post-seeding drench, transplant-water drench, or hill drench;
6. Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

**LEAFY GREEN VEGETABLES<sup>1,2</sup> (Foliar Application)**

Crops of Crop Group 4A: Amaranth (leafy amaranth, Chinese spinach, tampala), Arugula (Roquette), Chervil, Chrysanthemum (edible leaved and garland), Corn salad, Cress (garden), Cress (upland, yellow rocket, winter cress), Dandelion, Dock (sorrel), Endive (escarole), Lettuce (head and leaf), Orach, Parsley, Purslane (garden and winter), Radicchio (red chicory), Spinach (including New Zealand and vine (Malabar spinach, Indian spinach)), Watercress (commercial production only, applications must not be native cress growing in streams or other bodies of water), Watercress (upland)

Pests Controlled	Rate fluid ounces/Acre (on 36 inch rows)
Aphids Flea beetles Leafhoppers Whiteflies	3.0

**Restrictions:**

- Pre-Harvest Interval (PHI): 7 days
- Minimum interval between applications: 5 days
- Maximum amount allowed per year: 15.2 fluid ounces/Acre (0.24 lb AI/Acre)

**Applications:**

Apply specified dosage in one of the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment

2. In-furrow spray directed on or below seed
3. Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application
4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting
5. Post-seeding drench, transplant-water drench, or hill drench
6. Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

<sup>2</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.

#### LEAFY PETIOLE VEGETABLES<sup>1</sup> (Soil Application Only)

Crops of Crop Group 4B: Cardoon, Celery, Celtnce, Chinese Celery (fresh leaves and stalk only), Florence fennel (including sweet anise, sweet fennel, Finocchio), Rhubarb, Swiss chard

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Whiteflies	10.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 45 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>2. In-furrow spray directed on or below seed;</li> <li>3. Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application;</li> <li>4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting;</li> <li>5. Post-seeding drench, transplant-water drench, or hill drench;</li> <li>6. Subsurface side-dress on both sides of each row. This product must be incorporated into root zone.</li> </ol> <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.	

#### LEGUME VEGETABLES<sup>1</sup> except soybean, dry (Soil Application)

Crops of Crop Group 6:

Edible Podded and Succulent Shelled Pea and Bean and Dried Shelled Pea and Bean. (*Lupinus* spp., includes grain lupin, sweet lupin, white lupin, and white sweet lupin)

Bean (*Phaseolus* spp., includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean)

Bean (*Vigna* spp., includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, Crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, yardlong bean)

Pea (*Pisum* spp., includes dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea)

Other beans and Peas [Broad bean (fava), Chickpea (garbanzo bean), Guar, Jackbean, Lablab bean (hyacinth bean), Lentil, Pigeon pea, Soybean (immature seed), Sword bean]

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Thrips (foliage-feeding thrips only) Whiteflies	16.0-24.0
<b>Pests / Diseases Suppressed</b>	
Symptoms of: Bean common mosaic virus (BCMV) Bean golden mosaic virus (BGMV) Beet curly top hybrigeminivirus (BCTV)	16.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 21 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> </ol>	

2. In-furrow spray at planting directed on or below seed;
3. Narrow (2 inches or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1.5 inches with sufficient irrigation within 24 hours of application;
4. Narrow band spray directly below eventual seed row in bedding operation 14 or fewer days before planting;
5. Post-seeding drench, transplant-water drench, or hill drench;

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

**LEGUME VEGETABLES<sup>1</sup> except soybean, dry (Foliar Application)**

Crops of Crop Group 6:

Edible Podded and Succulent Shelled Pea and Bean and Dried Shelled Pea and Bean (*Lupinus* spp., includes grain lupin, sweet lupin, white lupin, and white sweet lupin)

Bean (*Phaseolus* spp., includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean)

Bean (*Vigna* spp., includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, Crowder pea, moth bean, mung bean, rice bean, Southern pea, urd bean, yardlong bean)

Pea (*Pisum* spp., includes dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea)

Other beans and Peas [Broad bean (fava), Chickpea (garbanzo bean), Guar, Jackbean, Lablab bean (hyacinth bean), Lentil, Pigeon pea, Soybean (immature seed), Sword bean]

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Whiteflies	2.8
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum amount allowed per year: 8.3 fluid ounces/Acre (0.13 lb AI/Acre)</li> </ul>	

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.

**ROOT VEGETABLES<sup>1</sup> (Soil Application)**

Crops of Crop Group 1B except Sugarbeet: Beet (garden)<sup>2</sup>, Burdock (edible)<sup>2</sup>, Carrot<sup>2</sup>, Celeriac<sup>2</sup>, Chervil (turnip-rooted)<sup>2</sup>, Chicory<sup>2</sup>, Ginseng, Horseradish, Kava<sup>2</sup>, Parsley (turnip-rooted), Parsnip<sup>2</sup>, Radish<sup>2</sup>, Oriental radish (diakon)<sup>2</sup>, Rutabaga<sup>2</sup>, Salsify (oyster plant), Salsify (black)<sup>2</sup>, Salsify (Spanish), Skirret and Turnip<sup>2</sup>.

Pests Controlled	Rate fluid ounces/1,000 row feet	Rate fluid ounces/Acre
Aphids Flea beetles Leafhoppers Whiteflies	0.7-1.7	10.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 21 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> <li>• Maximum number of applications per year: 1</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>2. In-furrow spray (rate specified per 1,000 row-feet) or, shanked-in 1 to 2 inches below seed depth during planting;</li> <li>3. Narrow (2 inches or less) band directly (1 to 2 inches) below the eventual seed row in a bedding operation 14 or fewer days before planting.</li> </ol> <b>Important Note:</b> The rate applied affects the length of the control. Use the higher rate within the labeled rate range where infestations occur later in crop development, or where pest pressure is continuous. Rates of this product less than 0.7 fluid ounces/1,000 row-feet will not provide adequate residual pest control. Crops treated with this product grown on very high organic matter soils (muck) may also require additional pest management control.		

<sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.  
<sup>2</sup> Tops or greens from these crops may be utilized for food or feed.

**ROOT VEGETABLES<sup>1</sup> (Foliar Application)**

Crops of Crop Group 1B except Sugarbeet: Beet (garden)<sup>2</sup>, Burdock (edible)<sup>2</sup>, Carrot<sup>2</sup>, Celeriac<sup>2</sup>, Chervil (turnip-rooted)<sup>2</sup>, Chicory<sup>2</sup>, Ginseng, Horseradish, Kava<sup>2</sup>, Parsley (turnip-rooted), Parsnip<sup>2</sup>, Radish<sup>2</sup>, Oriental radish (diakon)<sup>2</sup>, Rutabaga<sup>2</sup>, Salsify (oyster plant), Salsify (black)<sup>2</sup>, Salsify (Spanish), Skirret and Turnip<sup>2</sup>

Pests Controlled	Rate fluid ounces/Acre
Aphids Flea beetles Leafhoppers Whiteflies	2.8
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 5 days</li> <li>• Maximum amount allowed per year: 2.8 fluid ounces/Acre on radish; 8.3 fluid ounces/Acre (0.13 lb AI/Acre) on other crops</li> <li>• Maximum IMIDACLOPRID 2F INSECTICIDE applications per year: 1 on radish; 3 on other crops</li> </ul> <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling. <sup>2</sup> Tops or greens from these crops <u>may</u> be utilized for food or feed.	

#### TUBEROUS AND CORM VEGETABLES<sup>1</sup> (Soil Application)

Crops of Crop Group 1C: Arracacha, Arrowroot, Artichoke (Chinese and Jerusalem), Canna (edible, Queensland arrowroot), Cassava (bitter & sweet)<sup>2</sup>, Chayote (root), Chufa, Dasheen (taro)<sup>2</sup>, Ginger, Leren, Sweet potato, Tanier (cocoyam)<sup>2</sup>, Turmeric, Yam bean (jicama, manioc pea), Yam (true)<sup>2</sup> (For applications on potato see Field Crops section.)

Pests Controlled	Rate fluid ounces/1,000 row feet	Rate fluid ounces/Acre
Aphids Flea beetles Leafhoppers Whiteflies	0.7-1.7	10.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI) from planting applications: 3 days (leaves); 125 days (corms)</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> <li>• Maximum number of applications per year:1</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. In-furrow spray (rate specified per 1,000 row-feet) over planting material (hulis) or, shanked-in 1 to 2 inches below hulis depth at planting;</li> <li>2. Side-dress not more than 0.6 fluid ounce/1,000 row-feet no later than 45 days after planting. Observe same PHI as above.</li> </ol> <b>Important Note:</b> The rate applied affects the length of the control. Use the higher rate within the labeled rate range where infestations occur later in crop development, or where pest pressure is continuous. Rates of this product less than 0.7 fluid ounces/1,000 row-feet will not provide adequate residual pest control. Crops treated with this product grown on very high organic matter soils (muck) may also require additional pest management control. <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling. <sup>2</sup> Tops or greens from these crops <u>may</u> be utilized for food or feed.		

#### TUBEROUS AND CORM VEGETABLES<sup>1</sup> (Foliar Application)

Crops of Crop Group 1C: Arracacha, Arrowroot, Artichoke (Chinese and Jerusalem), Canna (edible, Queensland arrowroot), Cassava (bitter & sweet)<sup>2</sup>, Chayote (root), Chufa, Dasheen (taro)<sup>2</sup>, Ginger, Leren, Sweet potato, Tanier (cocoyam)<sup>2</sup>, Turmeric, Yam bean (jicama, manioc pea), Yam (true)<sup>2</sup> (For applications on potato see Field Crops section)

Pests Controlled	Rate fluid ounces/Acre
Aphids Flea beetles Leafhoppers Whiteflies	2.8
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 5 days</li> <li>• Maximum amount allowed per year: 8.3 fluid ounces/Acre (0.13 lb AI/Acre)</li> <li>• Maximum IMIDACLOPRID 2F INSECTICIDE applications per year: 3</li> </ul> <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling. <sup>2</sup> Tops or greens from these crops <u>may</u> be utilized for food or feed.	

**STRAWBERRY<sup>1,2</sup> (Soil Application)**

Annual And Perennial Crops	
Pests Controlled	Rate fluid ounces/Acre
Aphids Whiteflies	24.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment after plants are established or on perennial crops in early spring prior to bud opening;</li> <li>2. As a plant material or plant hole treatment just prior to, or during transplanting;</li> <li>3. As a preplant band spray over the row in a minimum of 20 gallons of water per acre, followed immediately by overhead irrigation to incorporate product into root zone. Do not use plastic or other mulches that limit movement of IMIDACLOPRID 2F INSECTICIDE into root zone.</li> </ol> The rate applied affects the length of control. Use the higher rate within the labeled rate range where infestations may occur later in crop development or where pest pressure is continuous.	
Post-harvest Use on Perennial Crops	
Pests Controlled	Rate fluid ounces/Acre
White grub complex (grubs of Asiatic garden beetle, European and Masked chafer, Japanese beetle, Oriental beetle)	16.0-24.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 14 days</li> <li>• Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)</li> </ul> <b>Applications:</b> Apply a single application post harvest to coincide with renovation of strawberry fields and during active egg-laying period of beetles. Apply specified dosage of this product in one of the following methods: <ol style="list-style-type: none"> <li>1. As a ground spray via boom or backpack sprayer in a minimum of 20 gallons of water per acre;</li> <li>2. As a row-band spray using an adjusted amount of product based on the treated row band area in proportion to the amount required per full acre. The bandwidth should be equivalent to the width of the anticipated fruiting bed;</li> <li>3. As a chemigation application with 600 to 1,000 gallons of water followed by 0.10 to 0.25 inch irrigation.</li> </ol> <b>Important Note:</b> All soil surface applications must be followed by 0.25 inch of rainfall or overhead irrigation water per acre within 2 hours of application. Failure to adequately incorporate this product into egg-deposition zone may result in decreased activity. <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling. <sup>2</sup> Do not use both application methods on the same crop in the same season.	

**STRAWBERRY (Foliar Application)**

Annual And Perennial Crops	
Pests Controlled	Rate fluid ounces/Acre
Aphids Spittlebugs Whiteflies	3.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 5 days</li> <li>• Maximum amount allowed per year: 9.1 fluid ounces/Acre (0.14 lb AI/Acre)</li> <li>• Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.</li> </ul>	

**SUGARBEET<sup>1</sup> (Soil Application Only)**

(For use only in CA)

Pests Controlled	Rate fluid ounces/Acre
Aphids	6.0-12.0

Flea beetles Leafhoppers Whiteflies	
<b>Pests / Diseases Suppressed</b>	
Symptoms of: Western yellows / Beet curly top hybrigeminivirus (BCTV)	6.0-12.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Maximum amount allowed per year: 12.0 fluid ounces/Acre (0.18 lb ai/acre)</li> <li>Maximum IMIDACLOPRID 2F INSECTICIDE allowed per year: 0.18 lb ai/acre (from any formulation) on any row spacing.</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: 1. Apply specified dosage in sufficient carrier volume to ensure uniform application. Apply directly below each seed furrow either during the bedding operation immediately prior to planting or at the time of planting. The low rate may be applied to aid establishment of stands in whitefly areas, or for early season control of the other pests listed. <sup>1</sup> Not for use on crops grown for seed unless allowed by state-specific 24(c) labeling.	

**IMIDACLOPRID 2F INSECTICIDE CONVERSION CHART FOR LINER APPLICATION**

Rate fluid ounces/Acre	Rate fluid ounces/1,000 row-feet Based on <u>average</u> row spacing (in inches):							
	10	15	20	25	30	35	40	45
10	0.19	0.29	0.38	0.48	0.57	0.67	0.76	0.86
12	0.23	0.34	0.46	0.57	0.69	0.80	0.92	1.03
14	0.27	0.40	0.54	0.67	0.80	0.94	1.07	1.21
16	0.31	0.46	0.61	0.77	0.92	1.07	1.22	1.38
18	0.34	0.52	0.69	0.86	1.03	1.21	1.38	1.55
20	0.38	0.57	0.76	0.96	1.15	1.34	1.53	1.72
22	0.42	0.63	0.84	1.05	1.26	1.47	1.68	1.89
24	0.46	0.69	0.92	1.15	1.38	1.61	1.84	2.07
26	0.50	0.75	0.99	1.24	1.49	1.74	1.99	2.24
28	0.54	0.80	1.07	1.34	1.61	1.87	2.14	2.41
30	0.57	0.86	1.15	1.43	1.72	2.01	2.29	2.58
32	0.61	0.92	1.22	1.52	1.84	2.14	2.45	2.75

**Important Note:** Rate of this product applied affects the length of control and to a considerable extent, the degree of control or effect. Row-spacing X rate combinations in shaded blocks may not provide adequate residual pest control and are not recommended for long-term, residual control. Use higher labeled rates where infestations may occur later in crop development or where pest pressure is continuous. Helena Chemical Company offers no warranty for use of this product at rates below 0.7 fluid ounces/1,000 row-feet.

**TREE, BUSH AND VINE CROPS  
Application Instructions**

**BANANA AND PLANTAIN (Soil Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers	16.0-32.0
<b>Pests Suppressed</b>	
Scales	16.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Pre-Harvest Interval (PHI): 0 days</li> <li>Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in the following methods: Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.	

**BANANA AND PLANTAIN<sup>1</sup> (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Thrips	6.4
<b>Notes and Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 0 days</li> <li>• Minimum interval between applications: 14 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)</li> </ul> <b>Applications:</b> Apply specified dosage of IMIDACLOPRID 2F INSECTICIDE as a broadcast or directed spray to infested area ensuring thorough coverage. IMIDACLOPRID 2F INSECTICIDE may be applied through properly calibrated ground or aerial application equipment. Aerial applications of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control relative to results from ground application. Addition of an organosilicone adjuvant at a rate not to exceed 2.0 fluid ounces/100 gallons finished spray solution may improve coverage and pest control.	
<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

**BUSHBERRY (Soil Application)**

Crops of Crop Group 13B: Blueberry, Currant, Elderberry, Gooseberry, Huckleberry, Juneberry, Lingonberry, Salal

Pests Controlled	Rate fluid ounces/Acre
Japanese beetle (adults, feeding on foliage) White grub complex (grubs of Asiatic garden beetle, European and Masked chafer, Japanese beetle and Oriental beetle)	16.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> <li>• Do not apply during bloom.</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>2. 18-inch band on each side of the row followed with 0.25 inch of irrigation immediately after application.</li> </ol> For optimal grub control, apply this product to control 1 <sup>st</sup> or 2 <sup>nd</sup> instar larvae. Application may be made post-bloom up to 7 days prior to harvest, or post-harvest until October 1 <sup>st</sup> . For optimum control of Japanese beetle larvae, make applications from June 1 <sup>st</sup> to July 15 <sup>th</sup> . Do not apply during bloom. Application to grass-covered rows, row middles, drive lanes, headlands, and other grassy areas in and around the berry field will control resident grub populations. Applications directed to the root zone will help protect berry plant roots from grub feeding. Apply this product to moist soil. If necessary, apply one hour of irrigation water immediately before application. Irrigate within 24 hours if rainfall does not occur after application of this product to facilitate movement into the soil and into the root zone.	

**BUSHBERRY (Foliar Application)**

Crops of Crop Group 13B: Blueberry, Currant, Elderberry, Gooseberry, Huckleberry, Juneberry, Lingonberry, Salal

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers/Sharpshooters	2.4-3.2
Japanese beetles (adults) Blueberry Maggot Thrips	4.8-6.4
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 3 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)</li> <li>• Maximum number of IMIDACLOPRID 2F INSECTICIDE applications per year: 5</li> <li>• Do not apply pre-bloom or during bloom or when bees are foraging.</li> </ul> <b>Applications:</b> For control of Aphids, Leafhoppers/Sharpshooters, Japanese beetles (adults), Blueberry Maggot and Thrips, use the higher rate within the labeled	

rate range when pest pressure is more severe.

### CANEBERRY (Soil Application)

#### Crops of Crop Group 13A:

Blackberry (*Rubus eubatus*, including bingleberry, black satin berry, boysenberry, Cherokee blackberry, Chesterberry, Cheyenne blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, Himalayaberry, hullberry, Lavacaberry, Loganberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, nectarberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, youngberry, and varieties and/or hybrids of these).

Raspberry (black and red, *Rubus occidentalis*, *Rubus strigosus*, *Rubus idaeus*).

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Whiteflies	16.0-32.0
Rednecked cane borer	24.0-32.0
<b>Pests / Diseases Suppressed</b>	
Thrips (foliage-feeding thrips only)	16.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> <li>• Do not apply pre-bloom or during bloom or when bees are foraging.</li> </ul> <b>Soil Application:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>2. Basal, soil drench in a minimum of 500 gallons solution per acre.</li> </ol>	

### CANEBERRY<sup>1</sup> (Foliar Application)

#### Crops of Crop Group 13A:

Blackberry (*Rubus eubatus*, including Andean Blackberry, Arctic blackberry, Bingleberry, Black satin berry, Boysenberry, Brombeere, California blackberry, Cherokee blackberry, Chesterberry, Cheyenne blackberry, Common blackberry, Coryberry, Darrowberry, Dewberry, Dirksen thornless berry, Evergreen blackberry, Himalayaberry, Hullberry, Lavacaberry, Loganberry, Lowberry, Lucretiaberry, Mammoth blackberry, Marionberry, Moras, Mures deronce, Nectarberry, Northern dewberry, Olallieberry, Oregon evergreen berry, Phenomenalberry, Rangeberry, Ravenberry, Rossberry, Shawnee blackberry, Southern dewberry, Tayberry, Youngberry, Zazamora, and varieties and/or hybrids of these).

Raspberry (*Rubus* spp. – including Bababerry, Black raspberry, Blackcap, Caneberry, Framboise, Frambueso, Himbeere, Keriberry, Mayberry, Red raspberry, Thimbleberry, Tulameen, Yellow raspberry, and varieties and/or hybrids of these, and Wild raspberry)

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Thrips	6.4
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 3 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum amount allowed per year: 19.2 fluid ounces/Acre (0.3lb ai/acre)</li> <li>• Do not apply pre-bloom or during bloom or when bees are foraging.</li> </ul> <sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

### CITRUS (Containerized) – soil treatment

Crops of Crop Group 10: Calamondin, Citrus citron, Citrus hybrids (includes chironja, tangelo, and tangor), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Tangelo, Satsuma mandarin, and other cultivars and/or hybrids of these.

Pests Controlled	Rate mL / "citra pot" (0.1ft <sup>3</sup> container media)
Aphids Asian citrus psyllid Black fly Citrus leafminer Leafhoppers / Sharpshooters	0.75-1.2

Mealybugs Scales Whiteflies Citrus root weevil (larval complex)	
<b>Pests Suppressed</b>	
Citrus thrips (foliage-feeding thrips only)	1.2
<p><b>Citrus (Containerized) Soil Applications</b> – For commercial nursery production in standard “citra pot” of 0.1 ft<sup>3</sup> volume. Apply specified dosage in one of the following methods:</p> <ol style="list-style-type: none"> <li>1) Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>2) Basal, soil drench in a minimum of 30 milliliters (mLs) total solution per “citra pot”.</li> </ol> <p>Use sufficient carrier volume to ensure thorough uniform distribution throughout the media without loss of gravitational water from the container. For optimal results, treatment should be made at planting/transplanting prior to insect infestation. Repeat if necessary but do not apply more than 6.8 mLs per plant per season. For control of larvae of the citrus root weevil complex, apply prior to neonate larvae entering potting media.</p> <p>Application – For citrus production with other container volumes: Determine volume of container and calculate required dosage based on 1.2 mLs / 0.1 ft<sup>3</sup> potting media. Apply calculated dosage per container as described above. Do not exceed rate of 6.8 mLs / plant per crop season regardless of container size.</p>	
<p><b>Citrus (containerized) – Soil Application Restrictions</b></p> <p>Pre-Harvest Interval (PHI): 0 day Maximum IMIDACLOPRID 2F INSECTICIDE allowed per application: 1.2 mLs / 0.1 ft<sup>3</sup> container media. Maximum IMIDACLOPRID 2F INSECTICIDE allowed per crop season: 6.8 mLs / plant. Do not apply pre-bloom or during bloom when bees are foraging.</p>	
<p><b>Citrus (containerized) – Soil Application Notes</b></p> <ol style="list-style-type: none"> <li>1) <b>Application</b> – For citrus production with other container volumes: Determine volume of container and calculate required dosage based on 1.2 mLs / 0.1 ft<sup>3</sup> potting media. Apply calculated dosage per container as described above. Do not exceed rate of 6.8 mLs / plant per crop season regardless of container size.</li> <li>2) <b>Phytotoxic Response Potential:</b> If you have no experience with Imidacloprid 4F on containerized citrus of a specific variety/hybrid, treat only a few plants and observe for phytotoxic effects for up to 60 days prior to treating entire nursery.</li> </ol> <p><b>PLEASE NOTE:</b> Not all varieties or hybrids of citrus have been tested for phytotoxic response following an IMIDACLOPRID 2F INSECTICIDE application.</p>	

**CITRUS (Soil Application) (Field)**

Crops of Crop Group 10: Calamondin, Citrus citron, Citrus hybrids (includes chironja, tangelo, and tangor), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Tangelo, Satsuma mandarin, and other cultivars and/or hybrids of these.

Pests Controlled	Rate fluid ounces/Acre
Aphids Asian citrus psyllid Blackfly Citrus leafminer Leafhoppers / Sharpshooters Mealybugs Scales Termites (FL only) Whiteflies	16.0-32.0
<b>Pests / Diseases Suppresses</b>	
Citrus nematode Symptoms of: Citrus tristeza virus (CTV) through vector control Citrus yellows Thrips (foliage feeding thrips only)	32.0
<p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 0 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> </ul> <p><b>Applications:</b> Apply specified dosage of this product in one of the following methods:</p> <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment. For optimum results, apply to newly planted trees or those previously trained to drip, trickle or micro-sprinkler irrigation. Lightly pre-wet soil to break soil surface tension prior to applications of this product. Chemigation application can be made separate to normal irrigation but followed by 10 to 20 minutes of additional</li> </ol>	

- watering to move this product into root zone. Allow 24 hours before initiating subsequent irrigations;
- Soil surface band spray on both sides of the tree. Bands should overlap at the tree base to create a continuous band within the drip-line area of the tree, to be followed immediately with light sprinkler irrigation sufficient to move the product into the upper portion of the root zone. This method is suitable for very coarse soils with 0.75% organic matter or less;
  - Drench to base of tree not exceeding one-quart total solution per tree immediately around trunk of the tree and extending outward covering the entire fibrous root system of the tree. Only for trees up to 8 feet tall;
  - For control of existing termite infestations, apply specified dosage in 1 to 4 quarts of total solution volume, depending on size of tree, as a drench application to the basal portion of the tree trunk and surrounding soil in the immediate vicinity of the tree trunk;
  - For suppression of citrus nematode, apply specific dosage through low-pressure chemigation or soil surface spray only, ensuring complete coverage of the root system and utilizing application directions stated above for the respective application method. Repeated and regular use of this product over several consecutive growing seasons provides the greatest degree of nematode suppression and yields the greatest plant response.

#### CITRUS (Foliar Application)

Crops of Crop Group 10: Calamondin, Citrus citron, Citrus hybrids (includes chironja, tangelo, and tangor), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Tangelo, Satsuma mandarin, and other cultivars and/or hybrids of these.

Pests Controlled	Rate fluid ounces/Acre
Aphids Asian citrus psyllid Blackfly Leafhoppers/Sharpshooters Mealybugs Scales Whiteflies	8.0-16.0  (depending on tree size, target pest and infestation pressure)
<b>Pests Suppressed</b>	
Thrips	8.0-16.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Pre-Harvest Interval (PHI): 0 days</li> <li>Minimum interval between applications: 10 days</li> <li>Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)</li> <li>Do not apply during bloom or within 10 days prior to bloom or when bees are foraging.</li> </ul> <b>Applications:</b> Aerial application of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control relative to results from ground application. Scales-time applications to the crawler stage. Treat each generation. Where concentrated applications are appropriate, increase the spray solution concentration to apply an equivalent rate per acre to that applied in the diluted application. The 16.0 fluid ounce/Acre rate is based on full sized trees. This rate may be reduced proportionally for smaller trees.	

#### COFFEE (Soil Application)

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Leafminer	16.0-32.0
<b>Pests / Diseases Suppressed</b>	
Scales	16.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>Pre-Harvest Interval (PHI): 7 days</li> <li>Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> <li>Do not apply during bloom.</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;</li> <li>Subsurface side-dress shanked into the root zone on both sides of the plants followed by irrigation;</li> <li>Basal, soil drench in sufficient water to insure incorporation into the root zone followed by irrigation.</li> </ol>	

**COFFEE<sup>1</sup> (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Leafminer	6.4
<b>Pests / Diseases Suppressed</b>	
Scales	6.4
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)</li> <li>• Do not apply pre-bloom or during bloom or when bees are foraging.</li> </ul> <b>Applications:</b> Apply specified dosage of IMIDACLOPRID 2F INSECTICIDE as a broadcast or directed spray to infested area ensuring thorough coverage. IMIDACLOPRID 2F INSECTICIDE may be applied through properly calibrated ground or aerial application equipment. Aerial applications of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control relative to results from ground application. <sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

**CRANBERRY (Soil Application Only)**

Pests Controlled	Rate fluid ounces/Acre
Rootgrubs ( <i>Scarabaeidae</i> ) Rootworms ( <i>Chrysomelidae</i> )	16.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 30 Days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> <li>• Do not apply during bloom.</li> </ul> <b>Applications:</b> Apply this product to moist soil. Apply specified dosage in one of the following methods: <ol style="list-style-type: none"> <li>1. As a soil spray (ground application) directed to the root and crown area using a minimum of 20 gal of water per acre;</li> <li>2. As a chemigation application with 600 to 1,000 gallons water.</li> </ol> Immediately upon application, this product must be incorporated into root zone by 0.1 to 0.3 inch water/acre, either with the chemigation application or through irrigation/rainfall if not applied through chemigation. Inadequate incorporation within 24 hours of application may result in reduced control. <b>Rootgrubs and Rootworms</b> Best control may be achieved when application is made post-bloom immediately after bees are removed. Applications should target early instar larvae. This product has not been tested for crop response in tank mixes with other registered fungicides or insecticides. If tank mixing is desired, premix a sample of this product and the desired fungicide or insecticide partner at labeled rates and apply to a small area. Evaluate crop response within 48 hours and for at least two weeks prior to utilizing the tank mix in larger acreage. If crop injury results from the premix test, do not apply the tank mix to larger acreage.	

**GRAPE (Soil Application)**

Including: American bunch grape, Muscadine grape and Vinifera grape

Pests Controlled	Rate fluid ounces/Acre
Leafhoppers / Sharpshooters Mealybugs <i>Phylloxera</i> <sup>1</sup> spp.	16.0-32.0
<b>Pests / Diseases Suppressed</b>	
Pierce's disease	24.0-32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 30 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in one of the following methods:	

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;
2. Subsurface side-dress shanked into the root zone on both sides of the plants followed by irrigation;
3. Hill drench in sufficient water to insure incorporation into the root zone followed by irrigation;

For optimum results, make application between bud-break and the pea-berry stage.

<sup>1</sup>Repeated and regular use of this product over several, consecutive growing seasons control existing *Phylloxera* infestations over time or prevents *Phylloxera* from becoming established.

#### GRAPE<sup>1</sup> (Foliar Application)

Including: American bunch grape, Muscadine grape and Vinifera grape

Pests Controlled	Rate fluid ounces/Acre
Leafhoppers/Sharpshooters Mealybugs	2.4-3.2
Grapeleaf skeletonizer	3.2

#### Restrictions:

- Pre-Harvest Interval (PHI): 0 days
- Minimum interval between applications: 14 days
- Maximum IMIDACLOPRID 2F INSECTICIDE allowed per year: 6.4 fluid ounces/Acre (0.1 lb (AI/A))

#### Applications:

For control of Grapeleaf skeletonizers, control can usually be achieved with ground applications that provide more thorough coverage of foliage. Aerial applications may only provide suppression due to lack of thorough coverage.

<sup>1</sup> Grapeleaf skeletonizer control can be expected from applications that provide thorough coverage of foliage. Aerial applications may provide suppression.

#### HOPS (Soil Application)

Pests Controlled	Rate fluid ounces/Acre
Aphids	6.4-19.2

#### Restrictions:

- Pre-Harvest Interval (PHI): 60 days
- Maximum amount allowed per year: 19.2 fluid ounces/Acre (0.30 lb ai/acre)

#### Applications:

Apply specified dosage in one of the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;
2. Subsurface side-dress shanked into the root zone on both sides of the plants followed by irrigation;
3. Hill drench in sufficient water to ensure incorporation into the root zone followed by irrigation;

Use the higher rate within the labeled rate range where extended residual control is desired or for treating larger vines or vines with dense foliage volume.

#### HOPS (Foliar Application)

Pests Controlled	Rate fluid ounces/Acre
Aphids	6.4

#### Restrictions:

- Pre-Harvest Interval (PHI): 28 days
- Minimum interval between applications: 21 days
- Maximum amount allowed per year: 19.2 fluid ounces/Acre (0.30 lb AI/Acre)

#### POME FRUIT<sup>1</sup> (Soil Application)

Crops of Crop Group 11: Apple, Crabapple, Loquat, Mayhaw, Pear (including Oriental pear), Quince

Pests Controlled	Rate fluid ounces/Acre
Aphids (including woolly apple aphid) Leafhoppers	16.0-24.0

#### Restrictions:

- Pre-Harvest Interval (PHI): 21 days
- Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)

**Applications:**

Apply specified dosage in the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.

<sup>1</sup>Use not permitted in California unless otherwise directed by 24(c) labeling.

**POME FRUIT<sup>1</sup> (Foliar Application)**

Crops of Crop Group 11: Apple, Crabapple, Loquat, Mayhaw, Pear (including Oriental pear), Quince

Pests Controlled	Rate fluid ounces/Acre
Leafhoppers	3.2-6.4
Aphids (except woolly apple aphid) Leafminers San Jose scale	6.4
FOR PEAR ONLY Mealybugs Pear psylla	16.0

**Restrictions:**

- Pre-Harvest Interval (PHI): 7 days
- Minimum interval between applications: 10 days
- Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)
- Do not apply pre-bloom or during bloom or when bees are foraging.

**Applications:**

Aerial application of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control relative to results from ground application.

1. Leafhoppers – apply low rate for low to moderate populations of white apple leafhoppers and high rate for high populations or for other leafhopper species. Apply IMIDACLOPRID 2F INSECTICIDE while more leafhoppers are in the nymphal stage.
2. Leafminer – for first generation leafminer control, make application after pollination is complete and bees are no longer present in the orchard. Greatest leafminer control will result from the earliest possible application. For second and succeeding generations of leafminer, better control will be obtained from applications made early in the adult flight against egg and early instar larvae. A second application may be required 10 days later if severe pressure continues or if generations are overlapping. A single application may result in suppression only. IMIDACLOPRID 2F INSECTICIDE will not control late instar larvae.
3. Mealybugs – apply maximum gallonage for tree with ground equipment. Ensure good spray coverage of the trunk and scaffolding limbs or other resting sites of mealybugs.
4. Rosy apple aphid – apply prior to leaf rolling caused by rosy apple aphid.
5. San Jose scale – time applications to the crawler stage. Treat each generation.

<sup>1</sup> The amount of IMIDACLOPRID 2F INSECTICIDE required per acre will depend on tree size and volume of foliage present. The rate per acre is based on a standard of 400 gallons of dilute spray solution per acre for large trees. To calculate the rate needed on smaller trees, multiply the pest specific rate (e.g., for aphid control, 1.6 fluid ounces/100 gallons) times the number of 100 gallons of spray solution required to thoroughly wet foliage just prior to the point of runoff, on one acre of the trees being treated. For concentrate sprays, apply the same amount of IMIDACLOPRID 2F INSECTICIDE per acre as would be applied in a dilute spray based on tree size and foliage volume.

**POMEGRANATE (Soil Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers / Sharpshooters Whiteflies	16.0-32.0

**Restrictions:**

- Pre-Harvest Interval (PHI): 0 days
- Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)
- Do not apply pre-bloom or during bloom or when bees are foraging.

**Applications:**

Apply specified dosage in the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.

**POMEGRANATE (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers / Sharpshooters Whiteflies	6.4
<b>Pests Suppressed</b>	
Scales	6.4
<b>Restrictions:</b>	
<ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 7 days</li> <li>• Maximum amount allowed per year: 19.2 fluid ounces/Acre (0.3 lb ai/acre)</li> <li>• Do not apply pre-bloom or during bloom or when bees are foraging.</li> </ul>	

**STONE FRUIT<sup>1</sup> (Soil Application)**

Crops of Crop Group 12: Apricot, Cherry (including sweet and tart), Nectarine, Peach, Plum (including Chickasaw, Damson and Japanese), Plumcot, Prune (fresh and dried)

<b>In-field, Soil Application</b>	
Pests Controlled	Rate fluid ounces/Acre
Aphids (including woolly apple aphid) Leafhoppers	16.0-24.0
<b>Restrictions:</b>	
Pre-Harvest Interval (PHI): 21 days Maximum amount allowed per year: 24.0 fluid ounces/Acre (0.38 lb ai/acre)	
<b>Applications:</b>	
Apply specified dosage in the following methods:	
1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.	
<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	
<b>Pre-plant, Root Dip Application</b>	
Pests Controlled	Rate fluid ounces/10 gallons root-dip solution
Black peach aphid (infesting roots)	2.0
Mix this product at a rate of 2.0 fluid ounces per 10 gallons of water. Thoroughly wet bare-root transplant to slightly above the graft union by soaking roots in this product's solution for up to 5 minutes. Allow solution to dry on roots and transplant trees as soon as possible following treatment.	

**STONE FRUIT<sup>1</sup> (Foliar Application)**

Crops of Crop Group 12: Apricot, Cherry (including sweet and tart), Nectarine, Peach, Plum (including Chickasaw, Damson and Japanese), Plumcot, Prune (fresh and dried)

<b>In-field, Soil Application</b>	
Pests Controlled	Rate fluid ounces/Acre
Aphids Green June beetle Japanese beetle Leafhoppers/Sharpshooters Plant bugs Rose chafer San Jose scale	3.2-6.4
Cherry fruit fly (maggot of Eastern and Western)	4.8-6.4
<b>Pests Suppressed</b>	
Plum curculio Stink bugs	6.4
<b>Restrictions:</b>	
Apricot, Nectarine, Peach:	
<ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 0 days</li> </ul>	

- Minimum interval between applications: 7 days
- Maximum amount allowed per year: 19.2 fluid ounces/Acre (0.30 lb AI/Acre)

**Cherries, Plums, Plumcot, Prune:**

- Pre-Harvest Interval (PHI): 7 days
- Minimum interval between applications: 10 days
- Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.50 lb AI/Acre)

**Applications:**

1. Aerial application of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control relative to results from ground application.
2. Minimum application volume (water): 50 GPA-ground application; 25 GPA-aerial application
3. Do not apply pre-bloom or during bloom or when bees are foraging.

**Pre-plant, Root Dip Application**

Pests Controlled	Rate fluid ounces/10 gallons root-dip solution
Black peach aphid (infesting roots)	2.0

Mix this product at a rate of 2.0 fluid ounces per 10 gallons of water. Thoroughly wet bare-root transplant to slightly above the graft union by soaking roots in this product's solution for up to 5 minutes. Allow solution to dry on roots and transplant trees as soon as possible following treatment.

**TREE NUTS except Almond<sup>1</sup> (Soil Application)**

Crops of Crop Group 14: Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert, Hickory nut, Macadamia nut, Pecan, Pistachio, Walnut (black and English)

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers /Sharpshooters Mealybugs Spittlebugs Termites Whiteflies	16.0-32.0
<b>Pests /Diseases Suppressed</b>	
Pecan scab (from reduction in honeydew deposition)	16.0-32.0
Thrips (foliage-feeding thrips only)	32.0

**Restrictions:**

Pre-Harvest Interval (PHI): 7 days

Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)

Do not apply pre-bloom or during bloom or when bees are foraging.

**Applications:**

Apply specified dosage prior to or at onset of pest infestation in one of the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment. Pre-wet soil prior to applications of this product and allow soil to dry following application and prior to subsequent irrigation;
2. Emitter or spot applications in a minimum of 4 fluid ounces of mixture per emitter site;
3. Shank or subsurface side-dress, injected to a depth just above or just within the root zone and between the trunk and drip line of the tree canopy. Product should be applied in a minimum of 10 gallons per acre using multiple shanks on both sides of trees. Ensure product placement is below sod or orchard floor debris. Irrigate within 48 hours the entire treated area to promote uptake by root systems;
4. For control of termites, apply specified dosage to slightly moist soil as a high-volume drench to the basal portion of the tree trunk and surrounding soil in the immediate vicinity of the tree trunk. Utilize sufficient carrier volume to penetrate the soil to a depth of 18 to 24 inches to obtain optimum control. Allow soil to dry following treatment and prior to applying any irrigation.

**Remarks:** Use the higher rate within the labeled rate range when applied by shank or subsurface side-dress, used on larger trees, soils with high clay content, for high plant populations, and/or where extended control is desired. Under some conditions, control may not occur for 14 or more days or until two (2) irrigations have been made. Applications made later in the season may result in reduced efficacy.

<sup>1</sup>Use not permitted in California unless otherwise directed by 24(c) labeling.

**TREE NUTS except Almond<sup>1</sup> (Foliar Application)**

Crops of Crop Group 14: Beechnut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert, Hickory nut, Macadamia nut, Pecan, Pistachio, Walnut (black and English)

Pests Controlled	Rate fluid ounces/Acre
Aphids (except Black pecan aphid) Leafhoppers/Sharpshooters Phylloxera spp. (leaf infestations) Spittlebugs Whiteflies	2.8-6.4
Black pecan aphid Mealybugs San Jose scales	6.4
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> <li>• Minimum interval between applications: 6 days</li> <li>• Maximum amount allowed per year: 22.8 fluid ounces/Acre (0.36 lb AI/Acre)</li> <li>• Do not apply pre-bloom or during bloom or when bees are foraging.</li> </ul> <b>Applications:</b> Applications for control of San Jose scale should be timed according to crawler stage, treating each successive generation. Two applications on a 10- to 14-day interval may be required to achieve control.	
<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

**TROPICAL FRUIT<sup>1</sup> (Soil Application)**

Including: Acerola, Atemoya, Avocado, Black sapote, Canistel, Cherimoya, Custard apple, Feijoa, Jaboticaba, Guava, Llama, Longan, Lychee, Mamey sapote, Mango, Papaya, Passionfruit, Persimmon, Pulasan, Rambutan, Sapodilla, Soursop, Spanish lime, Star apple, Starfruit, Sugar apple, Wax jambu

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers Whiteflies	24.0-32.0
<b>Pests/ Diseases Suppressed</b>	
Scales	32.0
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 6 days</li> <li>• Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)</li> </ul> <b>Applications:</b> Apply specified dosage in the following methods: <ol style="list-style-type: none"> <li>1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment.</li> </ol>	
<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.	

**TROPICAL FRUIT<sup>1</sup> (Foliar Application)**

Including: Acerola, Atemoya, Avocado, Black sapote, Canistel, Cherimoya, Custard apple, Feijoa, Jaboticaba, Guava, Llama, Longan, Lychee, Mamey sapote, Mango, Papaya, Passionfruit, Persimmon, Pulasan, Rambutan, Sapodilla, Soursop, Spanish lime, Star apple, Starfruit, Sugar apple, Wax jambu

Pests Controlled	Rate fluid ounces/Acre
Aphids Leafhoppers/Sharpshooters Mealybugs Thrips (foliage feeding thrips only) Whiteflies	6.4
<b>Pests / Diseases Suppressed</b>	
Scales	6.4
<b>Restrictions:</b> <ul style="list-style-type: none"> <li>• Pre-Harvest Interval (PHI): 7 days</li> </ul>	

- Minimum interval between applications: 10 days
- Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)
- Do not apply pre-bloom or during bloom or when bees are foraging.

**Applications:**

Aerial application of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control compared to ground application due to less thorough coverage.

<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.

**CHRISTMAS TREE (Soil Application)**

Pests Controlled	Rate fluid ounces/Acre
White grub complex (damage from grubs of Asiatic garden beetle, European and Masked chafer, Japanese beetle and Oriental beetle)	16.0-32.0

**Restrictions:**

Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)

**Applications:**

Soil incorporation and movement of this product to the root zone is required for activity. This product can be incorporated most readily when applied to moist soil. Apply specified dosage in the following methods:

1. Chemigation into root zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment;
2. 18-inch band on each side of the row (small trees) to full broadcast application (large trees) followed by rainfall or 0.25 to 1 inch of irrigation within 12 hours after application.

For optimal grub control, apply this product during adult flight activity, or up to mid-July when first instar larvae are present.

**CHRISTMAS TREE (Foliar Application)**

Pests Controlled	Rate fluid ounces/Acre
Aphids Adelgids Sawflies	3.2-6.4

**Restrictions:**

Minimum interval between applications: 7 days

Maximum amount allowed per year: 32.0 fluid ounces/Acre (0.5 lb AI/Acre)

**Applications:**

Aerial application of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control compared to ground application due to less thorough coverage. Use the higher rate within the labeled rate range when pest pressure is more severe.

1. Gall-forming adelgids – time applications to coincide with full bud-swell or first bud-break of earliest bud-breaking trees. After gall forms, spraying will no longer be effective.

**POPLAR / COTTONWOOD<sup>1</sup> (Soil Application)**

(includes members of the genus *Populus* grown for pulp or timber)

Pests Controlled	Rate fluid ounces/Acre
Aphids Cottonwood leaf beetle	16.0-32.0
<b>Pests / Diseases Suppressed</b>	
<i>Phylloxera popularia</i>	16.0-32.0

**Restrictions:**

Maximum amount allowed at-plant per year: 32.0 fluid ounces/Acre (0.5 lb ai/acre)

**Applications:**

Apply specified dosage in the following methods:

1. Chemigation through low-pressure drip irrigation;

For Cottonwood leaf beetle, protection against damage will occur when application is made early-season, when beetles first begin feeding. Larger trees may require earlier treatment as a result of slower uptake.

For *Phylloxera*, apply early in the year, from break of dormancy through May.

<sup>1</sup>Use not permitted in California unless otherwise directed by 24(c) labeling.

**POPLAR/COTTONWOOD<sup>1</sup> (Foliar Application)**(includes members of the genus *Populus* grown for pulp or timber)

Pests Controlled	Rate fluid ounces/Acre
Aphids Leaf beetles	3.2-6.4

**Restrictions:**

- Minimum interval between applications: 10 days
- Maximum amount allowed at-plant per year: 32.0 fluid ounces/Acre (0.50 lb AI/Acre)
- Do not apply pre-bloom or during bloom or when bees are foraging.

**Applications:**

Apply as a foliar spray at specified rate per acre when insect pressure reaches economic threshold. Uniform coverage is required to achieve best control and a spray adjuvant may help improve coverage. Two applications may be required to achieve control when initial insect populations are high. Retreatment should be based on field scout reports. IMIDACLOPRID 2F INSECTICIDE may be tank mixed with other labeled insecticides to increase control or control pests not controlled by imidacloprid. Aerial application of IMIDACLOPRID 2F INSECTICIDE may result in slower activity and reduced control compared to ground application due to less thorough coverage. Use the higher rate within the labeled rate range when pest pressure is more severe.

<sup>1</sup> Use not permitted in California unless otherwise directed by 24(c) labeling.

**STORAGE AND DISPOSAL**

Do not contaminate water, food or feed by storage or disposal.

**PESTICIDE STORAGE:** Store in a 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.

Handle and open container in a manner as to prevent spillage. If container is leaking, invert to prevent leakage. If the container is leaking or material is spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticide below. In spill or leak incidents, keep unauthorized people away.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:**

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(Nonrefillable > 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND DISCLAIMER**

**NOTICE:** Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Helena Chemical Company. All such risks shall be assumed by the user or buyer.

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