

34704-931

(7/29/2012

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D C 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

JUL 24 2012

Dr Premjit Halarnkar
Loveland Products Inc
P O Box 1286
Greeley CO 80632 1286

Subject Submission of Amended Labeling to Add the Following Me Too Foliar Uses
Globe Artichoke Herbs Potato Tobacco Citrus Bushberry Caneberry Pomegrante
Tree Nuts Grape Hop Stone Fruit Pome Fruit Fruiting Vegetables Brassica (Cole)
Leafy Vegetables Tuberos and Corm Legume Strawberry Banana Plantain
Christmas Trees Coffee and Tropical Fruit

Wrangler Insecticide

EPA Reg No 34704 931

Your submission date May 25 2012

Dear Dr Halarnkar

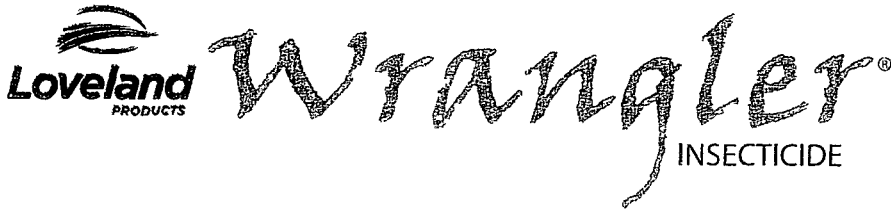
The labeling referred to above submitted in connection with registration under the Federal Insecticide Fungicide and Rodenticide Act as amended is acceptable A stamped copy is enclosed for your records Submit one copy of your final printed labeling before you release the product for shipment If there are questions call Dani Daniel at 703 305 5409 or electronically at daniel.dani@epa.gov

Sincerely

A handwritten signature in black ink that reads "Venus Eagle".

Venus Eagle

Product Manger (01)
Insecticide/Rodenticide Branch
Registration Division (7504P)



ACTIVE INGREDIENT		
Imidacloprid 1 [(6 Chloro 3 pyridinyl)methyl] N nitro 2 imidazolidinimine		40 7%
OTHER INGREDIENTS		59 3%
	TOTAL	100 0%

Contains 4 0 pounds of Imidacloprid per gallon

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

SHAKE WELL BEFORE USING

FIRST AID	
If swallowed	Call a poison control center or doctor immediately for treatment advice Have person sip a glass of water if able to swallow Do not induce vomiting unless told to do so by a poison control center or doctor Do not give anything by mouth to an unconscious person
If on skin or clothing	Take off contaminated clothing Rinse skin immediately with plenty of water for 15 to 20 minutes Call a poison control center or doctor for treatment advice
If inhaled	Move person to fresh air If person is not breathing call 911 or an ambulance then give artificial respiration Call a poison control center or doctor for treatment advice
If in eyes	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes Remove contact lenses if present after the first 5 minutes then continue rinsing eye Call a poison control center or doctor for treatment advice
Have a product container or label with you when calling a poison control center or doctor or going for treatment FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL 1 866 944 8565 Note to Physician No specific antidote is available Treat the patient symptomatically	

EPA REG NO 34704 931

EPA EST NO 34704 MS 001

NET CONTENTS 1 GAL (3 78 L)

EXP 05/12 CROPS

ACCEPTED

JUL 2 4 2012

Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended for the
pesticide registered under

EPA Reg No 34704-931

**WRANGLER® INSECTICIDE
EPA REG NO 34704 931**

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed absorbed through skin or inhaled Avoid breathing vapor or spray mist Wash thoroughly with soap and water after handling Remove contaminated clothing and wash before reuse

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are listed below More options can be obtained by following the instructions for Category C on an EPA chemical resistance category selection chart

Applicators and other handlers must wear

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

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

ENGINEERING CONTROLS STATEMENT

When handlers use closed systems enclosed cabs or aircraft 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 Personal Protective Equipment 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 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 on blooming crops or weeds Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area This product is toxic to wildlife and highly toxic to aquatic invertebrates

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 ground water 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

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling Do not apply this product in a way that will contact workers or other persons either directly or through drift Only protected handlers may be in the area during application For any requirements specific to your State or Tribe consult the agency responsible for pesticide regulation

**WRANGLER® INSECTICIDE
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AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and 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 following application

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 entry 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 nitrile rubber butyl rubber neoprene rubber natural rubber barrier laminate polyethylene polyvinyl chloride (PVC) or viton and

Shoes plus socks

Spray Drift Management

The interaction of many equipment and weather related factors determine the potential for spray drift The applicator is responsible for considering all of these factors when making application decisions Avoiding spray drift is the responsibility of the applicator

Mixing and Loading

To avoid potential contamination of groundwater the use of a properly designed and maintained containment pad for mixing and loading of any pesticide into application equipment is recommended If containment pad is not used maintain a minimum distance of 25 feet between mixing and loading areas and potential surface to groundwater conduits such as field sumps uncased well head sinkholes or field drains

For Aerial Applications

Mount the spray boom on the aircraft so as to minimize drift caused by wing tip vortices Use the minimum practical boom length do not exceed 75% of the wing span or rotor diameter

Release spray at the lowest possible height consistent with good pest control and flight safety Do not make applications more than 10 feet above the crop canopy

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 droplet spectrum that provides sufficient control and coverage Formation of very small droplets may be minimized by appropriate nozzle selection by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure

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 aerial or 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 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

No Spray Zone Requirements for Foliar Applications

Do not apply by ground within 25 feet or by air within 150 feet of lakes reservoirs rivers permanent streams marshes or natural ponds estuaries and commercial fish farm ponds

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Airblast (Air Assist) Specific Applications for Tree Crops and Vineyards

Airblast sprayer carry droplets into the canopy of trees/vineyards via a radially or laterally directed air stream. The following specific drift management practices should be followed:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy
- Block off upward pointed nozzles when there is no overhanging canopy
- Use only enough air volume to penetrate the canopy and provide good coverage
- Do not allow the spray to go beyond the edge of the cultivated area (i.e. turn off sprayer when turning at end rows)
- Only spray inward toward the orchard or vineyard for application to the outside rows

Runoff Management

Do not cultivate within 10 feet of the aquatic areas to allow growth of a vegetative filter strip

When used on erodible soils use 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.

Wrangler® Insecticide contains a Group 4A insecticide called imidacloprid. Insect biotypes with acquired or inherent tolerance to Group 4A products may eventually dominate the insect population if Group 4A products are used repeatedly as the predominant method of control for targeted species. This may eventually result in partial or total loss of control of those species by Wrangler Insecticide and to other Group 4A products.

The active ingredient in Wrangler Insecticide is a member of neonicotinoid chemical group. Insect pests resistant to other chemical classes have not shown cross resistant to Wrangler Insecticide. In order to maintain susceptibility to this class of chemistry in insect species with high resistance development potential for each crop season: 1) make only a single soil application of Wrangler Insecticide; 2) foliar applications of products from the same class not be made following a long residual soil application of Wrangler Insecticide or other neonicotinoid products.

If a soil application of Wrangler Insecticide has not been made during a crop season and foliar applications are to be made, avoid using a block of more than three consecutive applications of Wrangler Insecticide and/or other Group 4A products having the same or similar mode of action. Following a neonicotinoid block of treatments, Loveland Products, Inc. strongly encourages the rotation to a block of applications with effective products from a different mode of action before using additional applications of neonicotinoid products. Using a block of rotation or windowed approach, along with other IPM practices, is considered an effective use strategy for preventing or delaying an insect pest's ability to develop resistance to this class of chemistry.

Do not make foliar applications of Wrangler Insecticide or other Group 4A products on crops previously treated with a long residual soil applied product from the neonicotinoid chemical class.

Other Group 4A neonicotinoid products used as foliar treatments include Actara®, Assail®, CALYPSO®, Centric®, Intruder®, LEVERAGE® and PROVADO®. Other 4A Group neonicotinoid products used as soil treatment include ADMIRE® and Platinum®.

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

APPLICATION DIRECTIONS

For soil applications of Wrangler Insecticide, direct product into the seed or root zone of crop. Failure to place Wrangler Insecticide into root zone may result in loss of control or delay in onset of activity. Wrangler Insecticide may be applied with ground or chemical application equipment.

Do not apply Wrangler Insecticide in enclosed structures such as planthouses or greenhouses except as specifically instructed in the **TOBACCO CUCURBIT VEGETABLES FRUITING VEGETABLES and GREENHOUSE VEGETABLES** (Mature plants in production greenhouses). Cucumber, Tomato only sections of this label.

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Apply foliar applications of Wrangler Insecticide as directed or a broadcast foliar spray. Thorough coverage of foliage is necessary without runoff for optimum insecticidal efficacy. Use adequate spray volumes, properly calibrated application equipment, and spray adjuvant if necessary to obtain thorough coverage. Failure to provide adequate coverage and retention of Wrangler Insecticide on leaves and fruit may result in loss of insect control or delay in onset of activity. Apply Wrangler Insecticide with properly calibrated ground or aerial application equipment. Minimum spray volumes, unless otherwise specified on crop specific application sections, are 10 gallons per acre by ground and 5 gallons per acre by air. Wrangler Insecticide may also be applied by overhead chemigation (see additional information in **CHEMIGATION** section of this label below) if allowed in crop specific application section.

When applied as a soil application, optimum activity of Wrangler Insecticide results from applications to the root zone of plants to be protected. The earlier Wrangler Insecticide is available to the developing plant, the earlier the protection begins. Wrangler Insecticide is continuously taken into the roots over a long period of time, and the systemic nature of Wrangler Insecticide allows movement from roots through the xylem tissue to all vegetative parts of the plant. This results in extended residual activity of Wrangler Insecticide, the control of insects, and the prevention and/or reduction of virus transmission or symptom expression, and plant health benefits. The rate of Wrangler Insecticide applied affects the length of the plant protection period. Use higher rates when infestations occur later in crop development or where pest pressure is continuous. Wrangler Insecticide 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 crop specific pest controlled sections of this label. Additionally, specific Wrangler Insecticide application instructions are also provided in the crop specific sections of this label.

Suppression, or less than complete control, of certain insect pests that may carry diseases including reduced feeding, may also result from a Wrangler Insecticide application. Complete control of these pests may require supplemental control measures.

Generally, Wrangler Insecticide is not used on crops grown for production of true seed intended for private or commercial planting but may be allowed under state specific supplemental labeling. As with any insecticide, minimize exposure of Wrangler Insecticide to honey bees and other pollinators. Do not use Wrangler Insecticide on crops requiring bee pollination during bloom and a minimum of 10 days prior to bloom. Additional information on Wrangler Insecticide uses for these crops and other questions may be obtained from the Cooperative Extension Service, PCA's consultants, or local Loveland Products, Inc. representatives.

Apply only to plants grown in field type soils, potting media, or mixtures thereof. Do not apply to plants grown in nonsoil such as perlite, vermiculite, rock wool, or other soilless media, or plants growing hydroponically.

Pre mix Wrangler Insecticide with water or other appropriate diluent prior to application. Keep Wrangler Insecticide and water suspension agitated to avoid settling.

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

MIXING INSTRUCTIONS

Minimum spray volumes are 10.0 gallons per acre by ground application and 5.0 gallons per acre through aerial equipment. To prepare the application mixture, add half of the required amount of water to the spray tank and with agitation add Wrangler Insecticide. Complete filling tank with balance of water needed. Maintain sufficient agitation during both mixing and application. Wrangler Insecticide may also be used with other pesticides and/or fertilizer solutions. Please see Compatibility Note below. When tank mixtures of Wrangler Insecticide and other pesticides are involved, prepare the tank mixture as instructed above and follow Mixing Order below.

Mixing Order

When pesticide mixtures are needed, add wettable powders first, Wrangler Insecticide or other flowables second, and emulsifiable concentrates last. Ensure good agitation as each component is added. Do not add an additional component 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

Test compatibility of the intended tank mixture before adding Wrangler Insecticide to the spray or mix tank. Add proportionate amounts of each ingredient in the appropriate order to a pint or quart jar, cap, shake for 5 minutes, and let set for 5 minutes. Do not use if poor mixing or formation of precipitates that do not readily re-disperse. This indicates an incompatible mixture. For further information, contact your local Loveland Products, Inc. representative.

Chemigation

Types of Irrigation Systems Foliar chemigation applications of Wrangler Insecticide may be made to crops through overhead sprinkler systems if specified in crop specific application sections. Soil chemigation application of Wrangler Insecticide may only be made to crops through chemigation as specified in crop specified application sections and only through low pressure systems specifically for a given crop. Do not apply Wrangler Insecticide through any other type of irrigation system.

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Make foliar chemigation applications of Wrangler Insecticide as concentrated as possible. Retention of Wrangler Insecticide on target site of insect infestation is necessary for optimum activity. Do not use chemigation of Wrangler Insecticide in water volumes exceeding 0.10 inch per acre. See crop specific application sections of the label for more information.

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 any questions about calibration, contact Cooperative 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 on 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 systems 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 at 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 to 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 withdrawn from the supply tank when the irrigation system is either automatically or manually shuts 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 must be observed.

IMMEDIATE PLANT BACK

All crops on this label plus the following crops not on this label: barley, canola, corn (field, sweet and pop), mustard seed, rapeseed, sorghum, sunflower, watercress, wheat, and all crops from the following Crop Groups as recognized and defined by EPA. Crops contained within a particular crop group are subject to change. For information related to specific crops, please contact your Loveland Products, Inc. representative or refer to EPA website (www.epa.gov) for latest crop groups.

ROOT VEGETABLES Crops of Crop Group 1

LEAFY GREEN VEGETABLES Crops of Crop Group 4

HEAD and STEM BRASSICA VEGETABLES Crops of Crop Group 5

LEGUME VEGETABLES Crops of Crop Group 6 including Edible Podded plus Dried plus Succulent Shelled Peas and Beans

FRUITING VEGETABLES Crops of Crop Group 8

CUCURBIT VEGETABLES Crops of Crop Group 9

CITRUS Crops of Crop Group 10

POME FRUIT Crops of Crop Group 11

STONE FRUIT Crops of Crop Group 12

BUSHBERRY and CANEBERRY Crops of Crop Group 13 07

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HERBS Crops of Crop Group 19A

TROPICAL FRUIT – Including Acerola Atemoya Avocado Birida Black sapote Canistel Cherimoya Custard apple Feijoa Llama Jaboticaba Guava Longan Lychee Mamey sapote Mango Papaya Passion fruit Persimmon Pulasan Rambuten Sapodilla Sour sop, Spanish lime, Star apple, Starfruit Sugar apple, Wax jambu

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

APPLICATION INFORMATION — WRANGLER INSECTICIDE

Apply Wrangler Insecticide with properly calibrated ground or aerial application equipment Apply specified rate per acre as a direct ed or broadcast spray to infested area at earliest threshold for target pest as population begins to develop Thorough uniform cov erage of all plant parts is required to achieve optimum control Scout fields and retreat if needed

The lower rates can be used early season when pest pressures are low or when tank mixing with other effective products registered for target insect control Degree of control or suppression of additional labeled pests will be determined in part by the stage of pest development at application and infestation level of those pests Wrangler Insecticide provides optimal performance against early instar and early nymphal stages of insects as well as bollworm/budworm eggs Applications made with less than 5 gallons per acre may result in slower activity and/or less overall control from a single application than an application made with higher gallonages Use an organosilicone based spray adjuvant for applications targeting aphids and whiteflies

Regardless of formulation or method of application apply no more than 0.5 pound active ingredient of imidacloprid per acre per year including seed treatment soil and foliar uses

GLOBE ARTICHOKE soil treatment

Pests Controlled

Rate
Fl Ozs/Acre

Aphids

8.0 to 16.0

Leafhoppers

Restrictions

Pre Harvest Interval (PHI) **7 days**

Maximum Wrangler Insecticide amount allowed per season when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Applications

Apply specified dosage in the following method

- 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

Use not permitted in California unless otherwise directed by state specific supplemental labeling

GLOBE ARTICHOKE – foliar treatment

Pests Controlled

Rate
Fl Ozs/Acre

Aphids

1.6 to 4.0

Leafhoppers

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **14 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uni form coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests

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HERBS soil treatment

Including Angelica Balm (lemon balm) Basil (fresh and dried) Borage Bumet 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
Fl Ozs/Acre

Aphids	8 0 to 12 0
Flea beetles	
Leafhoppers	
Whiteflies	

Pests/Diseases Suppressed

Thrips (foliage feeding thrips only)	8 0 to 12 0
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Restrictions

Pre Harvest Interval (PHI) **14 days**

Maximum Wrangler Insecticide allowed per crop season when making soil applications **12 0 fluid ounces per acre** (0 38 pound active ingredient per acre)

Instructions

Apply specified dosage in one of the following methods

- 1 In furrow spray during 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

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

HERBS – foliar treatment

Including Angelica Balm (lemon balm) Basil (fresh and dried) Borage Bumet Chamomile 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
Fl Ozs/Acre

Aphids	1 4
Flea beetles	
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **5 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **4 2 fluid ounces per acre** (0 13 pound active ingredient per acre)

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700® to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests.

Apply Wrangler Insecticide through properly calibrated ground and aerial application equipment. Thorough coverage with direct contact of the spray material to the target pests is required for optimal control. The addition of an organosilicone based spray adjuvant at a rate not to exceed the adjuvant manufacturer's specified use rate may improve coverage and control.

Note Not all crops and/or varieties listed above have been tested for phytotoxic effects. Without specific knowledge about a particular crop and variety, treat only a small area or small number of plants of each listed above and evaluate prior to commercial use

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FIELD CROPS

Application Instructions – Wrangler Insecticide

COTTON Soil Treatment

Pests Controlled	Rate Fl Oz/1000 Row Ft	Rate Fl Ozs/Acre
Cotton aphid	0.65	8.5 to 10.5
Plant bugs		(Depending on row spacing)
Thrips		
Whiteflies		

Restrictions

Maximum Wrangler Insecticide allowed per crop season when making soil applications **10.5 fluid ounces per acre** (0.33 pound active ingredient per acre)

Regardless of formulation or method of application apply no more than 0.5 pound active ingredient of Wrangler Insecticide Provado Trimax® or Leverage per acre per season including seed treatment as Gaucho® soil and foliar uses Do not apply more than a total of 6 applications of the active ingredient per season Do not graze treated fields after any application of Wrangler Insecticide Please see Resistance Management section of this label

Instructions

Apply specified dosage of Wrangler 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 Treatment

Pests Controlled	Rate Fl Ozs/Acre
Bandedwinged whitefly	1.0 to 2.0
Bollworm/Budworm (ovicidal effect)	
Cotton aphid	
Cotton fleahopper	
Green stink bug	
Plant bugs (excludes <i>Lygus hesperus</i>)	
Southern green stink bug	

Pests Suppressed

Lygus bug (<i>Lygus hesperus</i>)	1.5 to 2.0
Whiteflies (other than bandedwinged whitefly)	

Restrictions

Pre Harvest (PHI) **14 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **10.0 fluid ounces per acre** (0.31 pound active ingredient per acre)

Regardless of formulation or method of application apply no more than 0.5 pound active ingredient per acre per season including seed treatment soil and foliar uses

Apply Wrangler Insecticide through properly calibrated ground aerial or chemical application equipment

Maximum number of Wrangler Insecticide applications per year **5**

Do not graze treated fields after any application of Wrangler Insecticide

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to an infested areas as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides to knockdown of pests or for improved control of other pests

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TANK MIX INFORMATION

Pests Controlled (In addition to pests listed above)	Wrangler Insecticide Rate Fl Ozs/Acre	Bidrin® 8 Rate Fl Ozs/Acre
For early season control of Thrips	1 0 to 1 5	1 6 to 3 2
For mid to late season control of Cotton leafperforator Grasshoppers Plant bugs Saltmarsh caterpillar Stink bugs (including Brown stink bug)	1 0 to 1 5	4 0 to 8 0
Restrictions (in addition to Restrictions listed above) Refer to the Bidrin 8 product label for specific use rates, follow all restrictions and precautions that appear on the label		

PEANUT

Pests Controlled	Rate Fl Ozs/Acre
Aphids	8 0 to 12 0
Leafhoppers	
Whiteflies	
Pest Suppressed	
Thrips	8 0 to 12 0
Restrictions Pre Harvest Interval (PHI) 14 days Maximum Wrangler Insecticide allowed per season 12 0 fluid ounces per acre (0 38 pound active ingredient per acre)	

Applications

- Apply specified dosage in one of the following methods
- 1 In furrow spray during planting directed on or below seed
 - 2 Chemigation into root zone through low pressure drip trickle micro sprinkler or equivalent equipment

Notes

Increases in Tomato spotted wilt virus (TSWV) incidence have been observed with applications of Wrangler 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 Wrangler Insecticide to peanuts, Loveland Products, Inc. recommends consultation with the State Cooperative Extension Service or Loveland Products, Inc. representative for recommendations. 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 Wrangler Insecticide.

Use not permitted in California unless otherwise directed by state specific supplemental labeling

POTATO soil treatment

Pests Controlled	Rate Fl Oz/1000 Row Ft	Rate Fl Ozs/Acre
Aphids	0 45 to 0 65	6 5 to 10 0
Colorado potato beetle		
Flea beetles		
Leafhoppers		
Potato psyllid		
Pests/Diseases Suppressed		
Symptoms of Potato leaf roll virus (PLRV)	0 45 to 0 65	6 5 to 10 0
Potato yellows		
Net necrosis (PLRV)		
Wireworms (with in furrow spray at planting)		

Restrictions

Maximum Wrangler Insecticide allowed per crop season when making soil applications **10 0 fluid ounces per acre** (0 31 pound active ingredient per acre)

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Potato soil treatment cont d

Instructions

Apply specified dosage of Wrangler Insecticide in one of the following methods

- 1 In furrow spray during planting directed on seed pieces or seed potatoes
- 2 Subsurface side dress on both sides on the row covered with 3 or more inches of soil
- 3 Narrow band spray at ground cracking directly over the row during hilling covered with 3 or more inches of soil
- 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 Wrangler Insecticide applications 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 Wrangler Insecticide may be made in a 2 to 4 inch band (width of planter shoe opening) and completely covered

POTATO

(Seed Piece Treatment)

Pests Controlled	Rate	Rate
	Fl Ozs/100 Lbs Seed	Fl Ozs/Acre
Aphids	0.2 to 0.4	4.0 to 8.0
Colorado potato beetle		
Flea beetles		
Leafhoppers		
Potato psyllid		
Wireworms (seed piece protection)		

Pests/Diseases Suppressed

Symptoms of	Rate	Rate
	Fl Ozs/100 Lbs Seed	Fl Ozs/Acre
Net necrosis (PLRV)	0.4	8.0
Potato leaf roll virus (PLRV)		
Potato yellows		

Restrictions

Maximum Wrangler Insecticide allowed per crop season when making seed piece treatment applications **10.0 fluid ounces per acre** (pound active ingredient per acre)

Do not use treated seed pieces for food feed or fodder Do not apply any subsequent application of Wrangler Insecticide (in furrow) Gaucho Leverage or Provado following a Wrangler Insecticide seed piece treatment

Instructions

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 Wrangler Insecticide Agitate or stir spray solution as needed Fungicidal or inert absorbent dusts may be applied after Wrangler Insecticide 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 Wrangler Insecticide treated seed pieces to sunlight and in accordance with the directions of your local Extension specialist

Consult your local Loveland Products Inc representative or crop protection product dealer for information relevant to your area

Based on a seeding rate of 2000 pounds per acre

POTATO foliar treatment

Pests Controlled	Rate
	Fl Ozs/Acre
Aphids	1.52
Colorado potato beetle	
Flea beetles	
Leafhoppers	
Psyllids	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **6.4 fluid ounces per acre** (0.2 pound active ingredient per acre)

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to an infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests

WRANGLER® INSECTICIDE
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TOBACCO soil treatment

Pests Controlled	Rate	Rate
	FI Ozs/1000 Plants (as seedling tray drench)	FI Ozs/1000 Plants (in furrow or transplant water)
Aphids	0.5	0.7
Flea beetles		
Mole crickets	0.7 to 1.4	0.9 to 1.4
Whiteflies		
Wireworms		
Pests/Diseases Suppressed		
Cutworms	0.7 to 1.4	0.9 to 1.4
Symptoms of Tomato spotted wilt virus (TSWV)		

Restrictions

Pre Harvest Interval (PHI) **14 days**
Maximum Wrangler Insecticide allowed per crop season when making soil applications or foliar sprays to seedlings **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Instructions

- Apply specified dosage of Wrangler Insecticide in one of the following methods
- 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 Wrangler Insecticide from foliage into potting media. Failure to wash Wrangler Insecticide from foliage may result in reduction in pest control. Transplants must be handled carefully during setting to avoid dislodging treated potted media from roots.
 - 2 In furrow spray or transplant water drench during setting.
 - 3 Chemigation into root zone through low pressure drip, trickle, micro sprinkler or equivalent equipment.

Important Note Proper tray drench applications of Wrangler Insecticide have been shown to be the most efficacious method of application. However, the specified rate of Wrangler Insecticide may be applied as a 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 Wrangler Insecticide into the plant and a delay in control.

TOBACCO – foliar treatment

Pests Controlled	Rate FI Ozs/Acre
Aphids	0.8 to 1.6
Flea beetles	1.6
Japanese beetles	

Restrictions

Pre Harvest Interval (PHI) **14 days**
Minimum interval between applications **7 days**
Maximum Wrangler Insecticide allowed per crop season when making foliar applications **8.9 fluid ounces per acre** (0.28 pound active ingredient per acre)

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to an infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests.

VEGETABLE and SMALL FRUIT CROPS
Application Directions – Wrangler Insecticide

Restrictions

Not for use on crops grown for seed unless allowed by state specific supplemental labeling

CUCURBIT VEGETABLES soil treatment

Including 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*)

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WRANGLER® INSECTICIDE
EPA REG NO 34704 931

Cucurbit Vegetables soil treatment cont d

Field application instructions See details below for additional planthouse instructions

Pests Controlled	Rate Fl Ozs/Acre
Aphids	8.0 to 12.0
Cucumber beetles	
Leafhoppers	
Thrips (foliage feeding thrips only)	
Whiteflies	

Pests/Diseases Suppressed

Bacterial wilt (as vectored by various cucumber beetles)	8.0 to 12.0
Leaf silvering resulting from whitefly feeding	

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed per application when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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 or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1 1/2 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 Wrangler Insecticide must be incorporated into root zone

Planthouse Application Instructions

Pests Controlled	Rate Fl Oz/1000 Plants
Aphids	
Whiteflies	0.05

Restrictions

Maximum amount of Wrangler Insecticide applied in the planthouse **0.05 fluid ounce** (0.00156 pound active ingredient) per **1000 plants**

Maximum number Wrangler Insecticide applications in planthouse **1**

Instructions

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 Wrangler Insecticide from foliage into potting media without loss of gravitational liquid from the bottom of the tray Failure to wash Wrangler Insecticide 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 will only provide short term protection and 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 Transplants must be handled carefully during setting to avoid dislodging treated potting media from roots

Not all varieties of cucurbit vegetables have been tested for tolerance to Wrangler Insecticide applied to seedling flats Therefore treat a small number of plants and confirm tolerance for 7 days prior to treating entire planthouse

Use not permitted in California unless otherwise directed by supplemental labeling

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WRANGLER® INSECTICIDE
EPA REG NO 34704 931

GREENHOUSE VEGETABLES soil treatment

(Mature plants in production greenhouses)

Cucumber, Tomato, only

Pests Controlled	Rate
	Fl Oz/1000 Plants
Aphids	0.7
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **0 days**

Maximum number of Wrangler Insecticide applications per crop season when making soil applications **1**

Instructions

Apply specified dosage in a minimum of 16.0 gallons of water for tomatoes and 21.0 gallons of water for cucumbers using soil drenches, micro irrigation, drip irrigation, or hand held or motorized calibrated irrigation equipment. Make applications only to plants grown in field type soils, potting media, or mixtures thereof. Do not apply to plants grown in nonsoil medias such as perlite, vermiculite, rock wool, or other soilless media, or plants growing hydroponically. Do not apply to immature plants since phytotoxicity may occur.

Apply 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* spp.) can occur when Wrangler Insecticide is applied.

Many varieties of vegetables have been tested for tolerance to Wrangler Insecticide and show good safety. However, certain varieties may show more sensitivity to Wrangler Insecticide. Therefore, treat a few plants before treating the whole greenhouse.

Not for use on crops grown for seed unless allowed by state specific supplemental labeling.

FRUITING VEGETABLES¹ soil treatment

Including Eggplant, Ground cherry, Okra, Pepper (including bell, chili, cooking, pimento and sweet), Tomato, Pepinos, Tomatillo

Field application instructions. See details below for additional planthouse instructions.

Pests Controlled	Rate
	Fl Ozs/Acre
Aphids	Okra and Pepper 8.0 to 16.0
Colorado potato beetle	
Flea beetles	Other Crops 8.0 to 12.0
Leafhoppers	
Thrips (foliage feeding thrips only)	
Whiteflies	

Pests/Diseases Suppressed

Symptoms of	Okra and Pepper
Tomato mottle virus	8.0 to 16.0
Tomato spotted wilt virus	Other Crops
Tomato yellow leaf curl virus	8.0 to 12.0

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed on pepper and okra crops per application when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Maximum Wrangler Insecticide allowed on other fruiting crops per application when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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" or less) surface band spray over seed line during planting, incorporated to a depth of 1" to 1 1/2" 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. Wrangler Insecticide must be incorporated into root zone.

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WRANGLER® INSECTICIDE
EPA REG NO 34704 931

Fruiting Vegetables¹ soil treatment cont d
Planthouse Application Instructions²

Pests Controlled	Rate Fl Oz/1000 Plants
Aphids	0.05
Whiteflies	

Restrictions

Maximum amount of Wrangler Insecticide applied in the planthouse **0.05 fluid ounce** (0.00156 pound active ingredient) per **1000 plants**
Maximum number Wrangler Insecticide applications in planthouse **1**

Instructions

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 Wrangler Insecticide from foliage into potting media without loss of gravitational liquid from the bottom of the tray Failure to wash Wrangler Insecticide 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 will only provide short term protection and is not intended as a substitution for a field application An additional field application must be made within 2 wks following transplanting to provide continuous protection

Applications of higher rates or increased number of applications in planthouse may result in significant plant injury Transplants must be handled carefully during setting to avoid dislodging treated potted media from roots

Not all varieties of fruiting vegetables have been tested for tolerance to Wrangler Insecticide applied to seedling flats Therefore treat a small number of plants and confirm tolerance for 7 days prior to treating entire planthouse

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling

²Use not permitted in CA unless otherwise directed by state specific supplemental labeling

FRUITING VEGETABLES¹ – foliar treatment

Including Eggplant Ground cherry Okra Pepper (including bell chili cooking pimento and sweet) Tomato Pepinos and Tomatillo

Pests Controlled	Rate Fl Ozs/Acre
Aphids	1.5 to 2.4
Colorado potato beetle	
Leafhoppers	
Whiteflies	
Pepper weevil	2.4

Restrictions

Pre Harvest Interval (PHI) **0 day**
Minimum interval between applications **5 days**
Maximum Wrangler Insecticide allowed per crop season when making foliar applications **7.6 fluid ounces per acre** (0.24 pound active ingredient per acre)

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests

For pepper weevil apply specific dosage of Wrangler 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 Applications of Wrangler Insecticide must be incorporated into a full season program where alternations of effective products from multiple classes of chemistry and different modes of action are utilized in a blocked or windowed approach

For additional information please contact your Loveland Products Inc representative Extension Specialist or crop advisor
When targeting adult whiteflies use higher rates

**WRANGLER® INSECTICIDE
EPA REG NO 34704 931**

BRASSICA (COLE) LEAFY VEGETABLES soil treatment

Including Broccoli Broccoli raab (*rapini*) Brussels sprouts Cabbage Cauliflower Cavalo broccoli Chinese (*gai lan*) broccoli Chinese (*bok choy*) cabbage Chinese (*napa*) cabbage Chinese mustard (*gai choy*) cabbage Collards Kale Kohlrabi Mizuna Mustard greens Mustard spinach Rape greens Turnip tops (leaves)

AND

LEAFY VEGETABLES soil treatment

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

Pests Controlled

**Rate
Fl Ozs/Acre
(on 36 inch rows)**

Aphids	5 0 to 12 0
Leafhoppers	
Thrips (foliage feeding thrips only)	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed per application when making soil applications **12 0 fluid ounces per acre** (0 38 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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 or less) surface band spray over seed line during planting incorporated to a depth of 1 to 1 1/2 with sufficient irrigation within 24 hrs 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 Wrangler Insecticide must be incorporated into root zone
- 7 Not for use on crops grown for seed unless allowed by state specific supplemental labeling

BRASSICA (COLE) LEAFY VEGETABLES¹ – foliar treatment

Including Broccoli Broccoli raab (*rapini*) Brussels sprouts Cabbage Cauliflower Cavalo broccoli Chinese (*gai lan*) broccoli Chinese (*bok choy*) cabbage Chinese (*napa*) cabbage Chinese mustard (*gai choy*) cabbage Collards Kale Kohlrabi Mizuna Mustard greens Mustard spinach Rape greens Turnip tops (leaves)

Pests Controlled

**Rate
Fl Ozs/Acre**

Aphids	1 5
Flea beetles	
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **5 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **7 68 fluid ounces per acre** (0 24 pound active ingredient per acre)

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests

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WRANGLER® INSECTICIDE
EPA REG NO 34704 931

LEAFY VEGETABLES¹ – foliar treatment

Including Amaranth (leafy amaranth Chinese spinach tampala) Arugula (Roquette) Chervil Chrysanthemum (edible leaved and garland) Cilantro Corn salad Cress (garden) Cress (upland yellow rocket winter cress) Dandelion Dock (sorrel) Endive (esca role) 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 made to native cress growing in streams or other bodies of water) Watercress (upland)

Pests Controlled	Rate Fl Ozs/Acre
Aphids	1.5
Flea beetles	
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **5 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **7.6 fluid ounces per acre** (0.24 pound active ingredient per acre)

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re-treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests.

For applications made to watercress production fields must be drained of water at least 24 hours prior to application and water must not be reapplied to the field for a minimum of 24 hours following the applications. Applications must be made to fully leafed up canopies only.

LEAFY PETIOLE VEGETABLES soil treatment

Including Cardoon Celery Celtuce Chinese celery (fresh leaves and stalk only) Florence fennel (including sweet anise sweet fennel, Finocchio), Rhubarb, Swiss chard

Pests Controlled	Rate Fl Ozs/Acre
Aphids	5.0 to 12.0
Leafhoppers	
Thrips (foliage feeding thrips only)	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **45 days**

Maximum Wrangler Insecticide allowed application when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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" or less) surface band spray over seed line during planting incorporated to a depth of 1" to 1 1/2" 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. Wrangler Insecticide must be incorporated into root zone
- 7 Not for use on crops grown for seed unless allowed by state specific supplemental labeling

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**WRANGLER® INSECTICIDE
EPA REG NO 34704 931**

LEGUME VEGETABLES except soybean dry soil treatment

Edible Podded and Succulent Shelled Pea and Bean and Dried Shelled Pea and Bean

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
	Fl Ozs/Acre
Aphids	8 0 to 12 0
Leafhoppers	
Thrips (foliage feeding thrips only)	
Whiteflies	

Pests/Diseases Suppressed

Symptoms of	8 0 to 12 0
Bean common mosaic virus (BCMV)	
Bean golden mosaic virus (BGMV)	
Beet curly top hybrigeminivirus (BCTV)	

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed per crop season when making soil applications **12 0 fluid ounces per acre** (0 38 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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
- 3 In a narrow (2" or less) surface band over seed line during planting incorporated to a depth of 1 to 1 1/2" with sufficient irrigation within 24 hrs following application
- 4 In a narrow band directly below the eventual seed row in a bedding operation 7 or fewer days before planting
- 5 As a post seeding drench transplant drench or hill drench
- 6 Not for use on crops grown for seed unless allowed by state specific supplemental labeling

LEGUME VEGETABLES¹ except soybean dry foliar treatment

Edible Podded and Succulent Shelled Pea and Bean and Dried Shelled Pea and Bean

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
	Fl Ozs/Acre
Aphids	1 4
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **4 2 fluid ounces per acre** (0 13 pound active ingredient per acre)

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests.

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WRANGLER® INSECTICIDE EPA REG NO 34704 931

ROOT VEGETABLES soil treatment

Including Beet (garden)¹ Burdock (edible)¹ Carrot¹ Celeriac¹ Chervil (turnip rooted)¹ Chicory¹ Ginseng Horseradish Kava^{1,2} Parsley (turnip rooted) Parsnip¹ Radish¹ Oriental radish (daikon)¹ Rutabaga¹ Salsify (oyster plant) Salsify (black)¹ Salsify (Spanish), Skirret and Turnip¹

Pests Controlled	Rate	Rate
	Fl Oz/1000 Row Ft	Fl Ozs/Acre
Aphids	0.35 to 0.85	5.0 to 12.0
Flea beetles		
Leafhoppers		
Thrips (foliage feeding thrips only)		
Whiteflies		

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed per crop season when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Maximum Wrangler Insecticide applications per crop season **1**

Instructions

Apply specified dosage of Wrangler Insecticide 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 (rate specified per 1000 row feet) or shanked in 1 to 2 inches below seed depth during planting
- 3 In a 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

Important Note The rate applied affects the length of control. Use higher rates where infestations occur later in crop development or where pest pressure is continuous. Wrangler Insecticide rates less than 0.7 fluid ounce per 1000 row feet will not provide adequate residual pest control. Wrangler Insecticide treated crops grown on very high organic matter soils (muck) may also require additional pest management control.

¹Tops or greens from these crops may be utilized for food or feed

²Use not permitted in California unless otherwise directed by state specific supplemental labeling

Not for use on crops grown for seed unless allowed by state specific supplemental labeling

ROOT VEGETABLES¹ foliar treatment

Including Beet (garden)² Burdock (edible)² Carrot² Celeriac² Chervil (turnip rooted)² Chicory² Ginseng Horseradish Kava^{2,3} Parsley (turnip rooted) Parsnip² Radish² Oriental radish (daikon)² Rutabaga² Salsify (oyster plant) Salsify (black)² Salsify (Spanish), Skirret, Turnip²

Pests Controlled	Rate
	Fl Ozs/Acre
Aphids	1.4
Flea beetles	
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **5 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **1.4 fluid ounces per acre** (0.044 pound active ingredient per acre) on Radish **4.2 fluid ounces per acre** (0.13 pound active ingredient per acre) on other crops

Maximum Wrangler Insecticide application(s) per crop season **1 on radish 3 on all other crops**

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling

²Tops and greens from these crops may be utilized for food or feed

³Use not permitted in California unless otherwise directed by state specific supplemental labeling

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests.

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WRANGLER® INSECTICIDE
EPA REG NO 34704 931

TUBEROUS and CORM VEGETABLES soil treatment

Including Arracacha Arrowroot Artichoke (Chinese and Jerusalem) Canna (edible Queensland arrowroot) Cassava (bitter & sweet)¹ Chayote (root) Chufa Dasheen (taro)¹ Ginger Leren Sweetpotato Tanier (cocoyam)¹ Turmeric Yam bean (jicama manioc pea), Yam (true)¹ (For application instructions on potato, see Field Crops section)

Pests Controlled	Rate	Rate
	Fl Oz/1000 Row Ft	Fl Ozs/Acre
Aphids	0.35 to 0.85	5.0 to 12.0
Flea beetles		
Leafhoppers		
Thrips (foliage feeding thrips only)		
Whiteflies		

Restrictions

Pre Harvest Interval (PHI) from planting application **3 days** (leaves) **125 days** (corms)
Maximum Wrangler Insecticide allowed per crop season when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)
Maximum Wrangler Insecticide applications per crop season **1**

Instructions

Apply specified dosage of Wrangler Insecticide in one of the following methods
1 In furrow spray (rate specified per 1000 row feet) over planting material (hulis) or shanked in 1 to 2 inches below hulis depth at planting
2 Side dress not more than 0.3 fluid ounce per 1000 row feet no later than 45 days after planting Observe same PHI as above

Important Note The rate applied affects the length of control Use higher rates where infestations occur later in crop development or where pest pressure is continuous Wrangler Insecticide rates less than 0.35 fluid ounce per 1000 row feet may not provide adequate residual pest control Wrangler Insecticide treated crops grown on very high organic matter soils (muck) may also require additional pest management control

¹Tops or greens from these crops may be utilized for food or feed
Not for use on crops grown for seed unless allowed by state specific supplemental labeling

TUBEROUS AND CORM VEGETABLES¹ foliar treatment

Including Arracacha Arrowroot Artichoke (Chinese and Jerusalem) Canna (edible Queensland arrowroot) Cassava (bitter and sweet)² Chayote (root) Chufa Dasheen (taro)² Ginger Leren Sweetpotato² Tanier (cocoyam)² Turmeric Yam bean (jicama manioc pea), Yam (true)², (For applications on potato, see FIELD CROPS section)

Pests Controlled	Rate
	Fl Ozs/Acre
Aphids	1.4
Flea beetle	
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**
Minimum interval between applications **5 days**
Maximum Wrangler Insecticide allowed per crop season when making foliar applications **1.4 fluid ounces per acre** (0.044 pound active ingredient per acre) on Radish **4.2 fluid ounces per acre** (0.13 pound active ingredient per acre) on other crops
Maximum Wrangler Insecticide application(s) per crop season **3 on all crops**

¹Not for use on crops grown for seed unless allowed by state specific supplemental labeling
²Tops and greens from these crops may be utilized for food or feed

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests

WRANGLER® INSECTICIDE
EPA REG NO 34704 931

STRAWBERRY¹ soil treatment

Annual and Perennial Crops

Pests Controlled

Rate
Fl Oz/Acre
12.0 to 16.0

Aphids
Whiteflies

Restrictions

Pre Harvest Interval (PHI) **14 days**

Maximum Wrangler Insecticide allowed per crop season when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide in one of the following methods

- 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
- 2 As a plant material or plant hole treatment just prior to or during transplanting
- 3 As a band spray over the row in a minimum of 20.0 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 Wrangler Insecticide into root zone

The rate applied affects the length of control. Use higher rates where infestations may occur later in crop development or where pest exposure is continuous

Post harvest Use on Perennial Crops

Pests Controlled

Rate
Fl Ozs/Acre
8.0 to 12.0

White grub complex
(grubs of Asiatic garden beetle, European
and Masked chafer, Japanese beetle, Oriental beetle)

Restrictions

Pre Harvest Interval (PHI) **14 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Instructions

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 Wrangler Insecticide in one of the following methods

- 1 As a ground spray via boom or backpack sprayer in a minimum of 20.0 gallons of water per acre
- 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
- 3 As a chemigation application with 600 to 1000 gallons of water followed by 0.10 to 0.25 inches irrigation

Important All soil surface applications must be followed by 0.25 inches of rainfall or overhead irrigation water per acre within 2 hrs of application. Failure to adequately incorporate Wrangler Insecticide into egg deposition zone may result in decreased activity of beetle grubs

¹Do not use both application methods on the same crop in the same season

WRANGLER® INSECTICIDE
EPA REG NO 34704 931

STRAWBERRY – foliar treatment

Pests Controlled	Rate Fl Ozs/Acre
Aphids	1.5
Spittlebugs	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**
 Minimum interval between applications **5 days**
 Maximum Wrangler Insecticide allowed per crop season when making foliar applications **4.5 fluid ounces per acre** (0.14 pound active ingredient per acre)
 Do not apply during bloom or within 10 days prior to bloom or when bees are actively foraging

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests.

SUGAR BEET soil treatment

(for use only in CA)

Pests Controlled	Rate Fl Ozs/Acre
Aphids	3.0 to 6.0
Flea beetles	
Leafhoppers	
Whiteflies	

Pests/Diseases Suppressed

Symptoms of Western yellows/Beet curly top hybrigeminivirus (BCTV)	3.0 to 6.0
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Restrictions

Maximum Wrangler Insecticide allowed per crop season when making soil applications **6.0 fluid ounces per acre** (0.18 pound active ingredient per acre)
 Maximum imidacloprid allowed per season **0.18 pound active ingredient per acre** (from any formulation) on any row spacing
 Do not apply immediately prior to bud opening or during bloom or when bees are actively foraging

Instructions

Apply specified dosage of Wrangler Insecticide in the following method

1. Apply specified dosage in sufficient carrier volume to insure 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. Not for use on crops grown for seed unless allowed by state specific supplemental labeling.

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Wrangler Insecticide Conversion Chart for Linear Application

RATE FI Ozs/A	Rate FI Ozs/1000 row ft Based on average row spacing (in inches)							
	10	15	20	25	30	35	40	45
5	0 0475	0 07125	0 095	0 11875	0 1425	0 16625	0 19	0 21375
6	0 057	0 0855	0 114	0 1425	0 171	0 1995	0 228	0 2565
7	0 0665	0 09975	0 133	0 16625	0 1995	0 23275	0 266	0 29925
8	0 076	0 114	0 152	0 19	0 228	0 266	0 304	0 342
9	0 0855	0 12825	0 171	0 21375	0 2565	0 29925	0 342	0 38475
10	0 095	0 145	0 19	0 24	0 285	0 335	0 38	0 43
12	0 115	0 17	0 23	0 285	0 345	0 4	0 46	0 515
14	0 135	0 02	0 27	0 335	0 4	0 47	0 535	0 605
16	0 155	0 23	0 305	0 385	0 46	0 535	0 61	0 69
18	0 17	0 26	0 345	0 43	0 515	0 605	0 69	0 775
20	0 19	0 285	0 38	0 48	0 575	0 67	0 765	0 86
22	0 21	0 315	0 42	0 525	0 63	0 735	0 84	0 945
24	0 23	0 345	0 46	0 575	0 69	0 805	0 92	1 035
26	0 25	0 375	0 495	0 62	0 745	0 87	0 995	1 12
28	0 27	0 4	0 535	0 67	0 805	0 935	1 07	1 205
30	0 285	0 43	0 575	0 715	0 86	1 005	1 145	1 29
32	0 305	0 46	0 61	0 76	0 92	1 07	1 225	1 375

Important Note The Wrangler Insecticide rate applied affects the length of control and to a considerable extent the degree of control or effect Row spacing X Wrangler Insecticide rate combinations in italics may not provide adequate residual pest control and are not suitable for long term residual control Use higher labeled rates where infestations may occur later in crop development or where pest pressure is continuous Loveland Products Inc offers no warranty for use of Wrangler Insecticide at rates below 0 35 fluid ounce per 1000 row feet

SOYBEAN foliar treatment

Pests Controlled	Rate FI Ozs/Acre
Aphids	1 5
Bean leaf beetle	
Cucumber beetles/Rootworm adults	
Japanese beetle (adults)	
Leafhoppers	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **7 days**
 Minimum interval between applications **7 days**
 Maximum Wrangler Insecticide amount allowed per crop season when making foliar applications **4 5 fluid ounces per acre** (0 14 pound active ingredient per acre)

Use not permitted in California or New York unless otherwise directed by supplemental labeling

TREE BUSH and VINE CROPS
 Application Directions – Wrangler Insecticide

BANANA and PLANTAIN soil treatment

Pests Controlled	Rate FI Ozs/Acre
Aphids	8 0 to 16 0
Leafhoppers	
Pests/Diseases Suppressed	
Scales	8 0 to 16 0

Restrictions

Pre Harvest Interval (PHI) **0 day**
 Maximum Wrangler Insecticide allowed per crop season when making soil applications **16 0 fluid ounces per acre** (0 50 pound active ingredient per acre)

Instructions

Apply specified dosage of this product in the following method
 1 Chemigation into root zone through low pressure drip, trickle, micro sprinkler or equivalent equipment

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BANANA and PLANTAIN – foliar treatment

Pests Controlled	Rate Fl Ozs/Acre
Aphids	3.2
Leafhoppers	
Thrips	

Restrictions

Pre Harvest Interval (PHI) **0 day**

Minimum interval between applications **14 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **16.0 fluid ounces per acre** (0.5 pound active ingredient per acre)

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re-treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

Apply specified dosage as a broadcast or directed spray to infested area ensuring thorough coverage. Wrangler Insecticide may be applied through properly calibrated ground or aerial application equipment. Aerial applications of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application.

BUSHBERRY soil treatment

Including Blueberry, Currant, Elderberry, Gooseberry, Huckleberry, Juneberry, Ligonberry, Salal

Pests Controlled	Rate Fl Ozs/Acre
Japanese beetle (adults feeding on foliage)	8.0 to 16.0
White grub complex (grubs of Asiatic garden beetle, European and Masked chafer, Japanese beetle and Oriental beetle)	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide in one of 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 followed with 0.25 inches of irrigation immediately after application.

For optimal grub control, apply Wrangler Insecticide to control 1st or 2nd instar larvae. Application may be made post-bloom up to 7 days prior to harvest or post-harvest until October 1st. For optimum control of Japanese beetle larvae, make applications from June 1 to July 15. Do not apply pre-bloom or during bloom or when bees are actively foraging.

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 Wrangler Insecticide to moist soil. If necessary, apply one hour of irrigation water immediately before application of Wrangler Insecticide. To facilitate movement of Wrangler Insecticide into the soil and root zone, 1/2 to 1 inch of irrigation water or rainfall must be applied or received within 24 hours of application.

WRANGLER® INSECTICIDE
EPA REG NO 34704 931

BUSHBERRY – foliar treatment

Including Blueberry, Currant, Elderberry, Gooseberry, Huckleberry, Juneberry, Lingonberry, and Salal

Pests Controlled

	Rate Fl Ozs/Acre
Aphids	1.2 to 1.6
Leafhoppers / Sharpshooters	
Blueberry maggot	2.4 to 3.2
Japanese beetle (adults)	
Thrips (foliage feeding thrips only)	

Restrictions

Pre Harvest Interval (PHI) **3 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **16.0 fluid ounces per acre** (0.5 pound active ingredient per acre)

Maximum Wrangler Insecticide allowed per season when making foliar applications **5**

Minimum application volume (water) 20.0 GPA – ground 5.0 GPA – aerial

Do not apply pre bloom or during bloom or when bees are actively foraging

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

CANEBERRY soil treatment

Including 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 Fl Ozs/Acre
Aphids	8.0 to 16.0
Leafhoppers	
Whiteflies	
Rednecked cane borer	12.0 to 16.0

Pest Suppressed

Thrips (foliage feeding thrips only)	8.0 to 16.0
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Restrictions

Pre Harvest Interval (PHI) **7 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

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. Basal, soil drench in a minimum of 500 gallons solution per acre

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CITRUS (Containerized) – Soil Treatment

Including Calamondin Citrus citron Citrus hybrids (includes chironja tangelo and tagor) Grapefruit Kumquat Lemon Lime Mandarin (tangerine) Pummelo Orange (sweet and sour) Tangelo Satsuma mandarin White sapote (*Casimiroa* spp) and other cultivars and/or hybrids of these

Pests Controlled

	Rate mL/ft³ Container Media
Aphids	0.375
Asian citrus psyllid	
Black fly	
Citrus leafminer	
Leafhoppers / Sharpshooters	
Mealybugs	
Scales	
Whiteflies	

Citrus root weevil (larval complex)	0.625 to 1.25
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Pests/Diseases Suppressed

Citrus thrips (foliage feeding thrips only)	1.25
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Instructions

Determine volume of container and calculate dosage necessary to treat container. Apply calculated dosage of Wrangler Insecticide per container as a soil drench or through low pressure drip or trickle irrigation water. 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 prior to insect infestation. Retreat if necessary. For control of larvae of the citrus root weevil complex, application should be made prior to neonate larvae entering potting media. Utilize higher dosage for heavy infestations.

CITRUS (Field) soil treatment

Including Calamondin Citrus Citron Citrus hybrids (includes chironja tangelo and tangor) Grapefruit Kumquat Lemon Lime Mandarin (tangerine) Pummelo Orange (sweet and sour) Tangelo Satsuma mandarin White sapote (*Casimiroa* spp) and other cultivars and/or hybrids of these

Pests Controlled

	Rate Fl Ozs/Acre
Aphids	8.0 to 16.0
Asian citrus psyllid	
Black fly	
Citrus leafminer	
Leafhoppers / Sharpshooters	
Mealybugs	
Scales	
Termites (FL only)	
Whiteflies	

Citrus nematode	16.0
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Pests/Diseases Suppressed

Symptoms of Citrus tristeza virus CTV through vector control	
Citrus yellows	
Thrips (foliage feeding thrips only)	

Restrictions

Pre Harvest Interval (PHI) **0 day**
 Maximum Wrangler Insecticide allowed per season when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Instructions

- Apply specified dosage of Wrangler Insecticide in one of the following methods:
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. To break soil surface tension, lightly pre-wet soil prior to applications of Wrangler Insecticide. Chemigation application can be made separate to normal irrigation but followed by 10 to 20 minutes of additional watering to move Wrangler Insecticide into root zone. Allow 24 hours before initiating subsequent irrigations.
 2. Soil surface band spray on both sides of the tree. Overlap bands at the base of the tree 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.
 3. Drench to base of tree not exceeding one quart total solution/tree immediately around trunk of tree and extending outward covering the entire fibrous root system of the tree. Only suitable for trees up to 8 feet tall.

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Citrus (Field) soil treatment cont d

- 4 For control of existing termite infestations apply specified dosage in 1 0 to 4 0 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
- 5 For suppression of citrus nematode apply specified dosage through low pressure chemigation or soil surface band 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 Wrangler Insecticide over several consecutive growing seasons provides the greatest degree of nematode suppression and yields the greatest plant response

CITRUS (Field) – foliar treatment

Including Calamondin Citrus citron Citrus hybrids (includes chironja tangelo and tangor) Grapefruit Kumquat Lemon Lime Mandarin (tangerine) Pummelo Orange (sweet and sour) Satsuma mandarin Tangelo White sapote (*Casimiroa* spp) and other cultivars and/or hybrids of these

Pests Controlled

- Aphids
- Asian citrus psyllid
- Blackfly
- Leafhoppers / Sharpshooters
- Leafminers
- Mealybugs
- Scales
- Whiteflies

Rate
Fl Ozs/Acre

4 0 to 8 0
 (depending on tree size target pest and infestation pressure)

Pests Suppressed

Thrips (foliage feeding thrips only)

Rate
Fl Ozs/Acre
 4 0 to 8 0

Restrictions

Pre Harvest Interval (PHI) **0 day**
 Minimum interval between applications **10 days**
 Maximum Wrangler Insecticide allowed per season when making foliar applications **16 0 fluid ounces per acre** (0 5 pound active ingredient per acre)
 Do not apply during bloom or within 10 days prior to bloom or when bees are actively foraging

Application

Scales – time applications to the crawler stage Treat each generation
 Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application For tree and vine crops, application rates are based on full size mature trees or vines

COFFEE soil treatment

Pests Controlled

- Aphids
- Leafhoppers
- Leafminer

Rate
Fl Ozs/Acre

8 0 to 16 0

Pests/Diseases Suppressed

Scales

8 0 to 16 0

Restrictions

Pre Harvest Interval (PHI) **7 days**
 Maximum Wrangler Insecticide allowed per crop season when making soil applications **16 0 fluid ounces per acre** (0 50 pound active ingredient per acre)
 Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

- 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 Basal, soil drench in sufficient water to insure incorporation into the root zone followed by irrigation

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COFFEE – foliar treatment

Pests Controlled	Rate Fl Ozs/Acre
Aphids	3.2
Leafhoppers	
Whiteflies	
Pests Suppressed	Rate Fl Ozs/Acre
Scales	3.2

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **16.0 fluid ounces per acre** (0.5 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Applications

Apply specified dosage as a broadcast or directed spray to infested area insuring thorough coverage. Apply Wrangler Insecticide through properly calibrated ground or aerial application equipment. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application.

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

CRANBERRY soil treatment

Pests Controlled	Rate Fl Ozs/Acre
Rootgrubs (Scarabaeidae)	8.0 to 16.0
Rootworms (Chrysomelidae)	

Restrictions

Pre Harvest Interval (PHI) **30 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **16.0 fluid ounces per acre** (0.5 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

Apply Wrangler Insecticide to moist soil. Apply specified dosage of Wrangler Insecticide in one of the following methods:

1. As a soil spray (ground application) directed to the root and crown area using a minimum of 20.0 gallons of water per acre.
2. As a chemigation application with 600 to 1000 gallons water.

Immediately upon application, Wrangler Insecticide must be incorporated into root zone by 0.1 to 0.3 inch water per 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.

Rootgrubs and Rootworms

Best control may be achieved when application is made post bloom immediately after bees are removed. Applications should target early instar larvae.

Wrangler Insecticide 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 the Wrangler Insecticide 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 on larger acreage. If crop injury results from the premix test, do not apply the tank mix to larger acreage.

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WRANGLER® INSECTICIDE
EPA REG NO 34704 931

GRAPE soil treatment

Including American bunch grape Muscadine grape and Vinifera grape

Pests Controlled

Rate
Fl Ozs/Acre

European fruit lecanium	8 0 to 16 0
Leafhoppers/Sharpshooters	
Mealybugs	
<i>Phylloxera</i> spp	

Pests/Diseases Suppressed

Grapeleaf skeletonizer	12 0 to 16 0
Nematodes	
Pierce s disease	

Restrictions

Pre Harvest Interval (PHI) **30 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **16 0 fluid ounces per** (0 50 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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
- 4 For suppression of nematodes apply 7 0 fluid ounces in a single application or two 3 5 fluid ounces applications on a 30 to 45 day interval Apply only by 1) chemigation into root zone through above ground low pressure drip trickle micro sprinkler or equivalent equipment or 2) French plow technique followed immediately by sufficient irrigation to move the product into the entire root zone of the plant Repeated and regular use of Wrangler Insecticide over several consecutive growing seasons provides the greatest degree of nematode suppression and yields the greatest plant response For optimal results make application(s) between bud break and the pea berry stage A total of 14 0 fluid ounces per acre is recommended under any of the following conditions

- 1 Where vigorous vine growth is expected
- 2 In warmer growing areas
- 3 Where mealybug and European fruit lecanium populations are expected to be heavy
- 4 Where vine populations exceed 600 per acre or
- 5 For suppression of nematodes

Repeated and regular use of Wrangler Insecticide over several consecutive growing seasons controls existing *Phylloxera* infestations over time or prevents *Phylloxera* from becoming established

GRAPE – foliar treatment

Including American bunch grape, Muscadine grape, and Vinifera grape

Pests Controlled

Rate
Fl Ozs/Acre

Leafhoppers / Sharpshooters	1 2 to 1 6
Mealybugs	
Grape skeletonizer	1 5 to 1 6

Restrictions

Pre Harvest Interval (PHI) **0 days**

Minimum interval between applications **14 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **3 2 fluid ounces per acre** (0 1 pound active ingredient per acre)

Apply Wrangler Insecticide by ground application only

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application For tree and vine crops, application rates are based on full size mature trees or vines

WRANGLER® INSECTICIDE
EPA REG NO 34704 931

HOP soil treatment

Pests Controlled

Rate
Fl Ozs/Acre

Aphids

9.6

Restrictions

Pre Harvest Interval (PHI) **60 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **9.6 fluid ounces per acre** (0.3 pound active ingredient per acre)

Instructions

Apply specified dosage of Wrangler Insecticide 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
- 4 Use the higher dosage where extended residual control is desired or for treating larger vines with dense foliage volume

HOP – foliar treatment

Pests Controlled

Rate
Fl Ozs/Acre

Aphids

3.2

Restrictions

Pre Harvest Interval (PHI) **28 days**

Minimum interval between applications **21 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **9.6 fluid ounces per acre** (0.3 pound active ingredient per acre)

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimum control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

POME FRUIT soil treatment

Including Apple, Crabapple, Loquat, Mayhaw Pear (including Oriental pear), Quince

Pests Controlled

Rate
Fl Ozs/Acre

Aphids (including woolly apple aphid)

8.0 to 12.0

Leafhoppers

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

Apply specified dosage of Wrangler Insecticide in the following method

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

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POME FRUIT – foliar treatment

Including Apples, Crabapple, Loquat, Mayhaw, Pear (including Oriental pear), Quince

Pests Controlled	Rate Fl Ozs/Acre
Leafhoppers	1.6 to 3.2
Aphids (except woolly apple aphid)	3.2
Apple maggot	
Leafminers	
San Jose scale	

FOR PEAR ONLY

Mealybugs	8.0
Pear psylla	

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **10 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **16 fluid ounces per acre** (0.5 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Applications

Combine applications targeting apple maggots with an approved sticker at the manufacturer's specified rates

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimal control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re-treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

POMEGRANATE soil treatment

Pests Controlled	Rate Fl Ozs/Acre
Aphids	8.0 to 16.0
Leafhoppers / Sharpshooters	
Whiteflies	

Restrictions

Pre Harvest Interval (PHI) **0 day**

Maximum Wrangler Insecticide allowed per crop season when making soil applications **16.0 fluid ounces per acre** (0.50 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

Apply specified dosage of this product in the following method

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

POMEGRANATE– foliar treatment

Pests Controlled	Rate Fl Ozs/Acre
Aphids	3.2
Leafhoppers / Sharpshooters	
Whiteflies	

Pests Suppressed

	Rate Fl Ozs/Acre
Scales	3.2

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **9.6 fluid ounces per acre** (0.3 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

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Pomegranate— foliar treatment cont d

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimal control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

STONE FRUIT soil treatment

Including Apricot Cherry (including sweet and tart) Nectarine Peach Plum (including Chickasaw Damson and Japanese) Plumcot, Prune (fresh and dried)

In field, Soil Application

Pests Controlled

Rate
Fl Ozs/Acre

Aphids (including woolly apple aphid)

8.0 to 12.0

Leafhoppers

Restrictions

Pre Harvest Interval (PHI) **21 days**

Maximum Wrangler Insecticide allowed per season when making soil applications **12.0 fluid ounces per acre** (0.38 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

Apply specified dosage of Wrangler Insecticide in the following method

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

Pre plant, Root Dip Application

Pests Controlled

Rate
Fl Ozs/10.0 Gals Root Dip Solution

Black peach aphid (infesting roots)

1.0

Mix Wrangler Insecticide at **1.0** fluid ounces per 10.0 gallons of water. Thoroughly wet bare root transplant to slightly above the graft union by soaking roots in the Wrangler Insecticide solution for up to 5 minutes. Allow solution to dry on roots and transplant trees as soon as possible following treatment.

STONE FRUIT – foliar treatment

Including Apricot Cherry (including sweet and tart) Nectarine Peach Plum (including Chickasaw Damson and Japanese) Plumcot, Prune (fresh and dried)

Pests Controlled

Rate
Fl Ozs/Acre

Aphids

1.6 to 3.2

Green June beetle

Japanese beetle

Leafhoppers / Sharpshooters

Plant bugs

Rose chafer

San Jose scale

Cherry fruit fly

2.4 to 3.2

Pests Suppressed

Rate
Fl Ozs/Acre

Plum curculio

3.2

Stink bugs

Restrictions for Apricot Nectarine Peach

Pre Harvest Interval (PHI) **0 days**

Minimum interval between applications **7 days**

Maximum Wrangler Insecticide allowed per season when making foliar applications **9.6 fluid ounces per acre** (0.3 pound active ingredient per acre)

Minimum application volume (water) 50 GPA – ground application 25 GPA – aerial application

Do not apply pre bloom or during bloom or when bees are actively foraging

Restrictions for Cherries Plums Plumcot Prune

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **10 days**

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Stone Fruit – foliar treatment cont d

Maximum Wrangler Insecticide allowed per season when making foliar applications **16 0 fluid ounces per acre** (0 5 pound active ingredient per acre)

Minimum application volume (water) 50 GPA – ground application 25 GPA – aerial application

Do not apply pre bloom or during bloom or when bees are actively foraging

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uniform coverage is necessary to achieve optimal control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application For tree and vine crops, application rates are based on full size mature trees or vines

TROPICAL FRUIT soil treatment

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

Pests Controlled

Rate
Fl Ozs/Acre
12 0 to 16 0

Aphids
Avocado lacebug
Leafhoppers
Whiteflies

Pests/Diseases Suppressed

Scales 16 0
Thrips (foliage feeding thrips only)

Restrictions

Pre Harvest Interval (PHI) **6 days**

Maximum Wrangler Insecticide allowed per application when making soil applications **16 0 fluid ounces per acre** (0 50 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

Apply specified dosage of Wrangler Insecticide in the following method

1 Chemigation through low pressure drip, trickle, micro sprinkler or equivalent equipment

TROPICAL FRUIT– foliar treatment

Including Acerola Atemoya Avocado Birida Black sapote Canistel Chermoya 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
Fl Ozs/Acre
3 2

Aphids
Leafhoppers / Sharpshooters
Mealybugs
Thrips (foliage feeding thrips only)
Whiteflies

Pests Suppressed

Rate
Fl Ozs/Acre
3 2

Scales

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **10 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **16 0 fluid ounces per acre** (0 5 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

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Tropical Fruit— foliar treatment cont d

Applications

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build. Thorough uniform coverage is necessary to achieve optimal control. Use a spray adjuvant such as LI 700 to improve coverage. Wrangler Insecticide may not knock down established and heavy insect populations. Two applications may be required to achieve control. Scout fields and re treat if needed. Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests. Aerial application of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application. For tree and vine crops, application rates are based on full size mature trees or vines.

TREE NUTS Soil Treatment

Including Almond Beechnut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert Hickory nut Macadamia nut Pecan Pistachio, Walnut (black and English)

Pests Controlled

Rate
Fl Ozs/Acre

Aphids	8 0 to 16 0
Leafhoppers/Sharpshooters	
Mealybugs	
Spittlebugs	
Termites	
Whiteflies	

Pests/Diseases Suppressed

Pecan scab (from reduction in honeydew deposition)	8 0 to 16 0
Thrips (foliage feeding thrips only)	16 0

Restrictions

Pre Harvest Interval (PHI) **7 days**

Maximum Wrangler Insecticide allowed per crop season when making soil applications **16 0 fluid ounces per acre** (0 50 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

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 application in a minimum of 4 0 fluid ounces of mixture/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 0 gallons per acre using multiple shanks on both sides of trees. Ensure product placement is below sod or orchard floor debris. Irrigation covering entire treated area should follow within 48 hours to promote uptake by root system
- 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

Use the higher rates when applied by shank or subsurface side dress used on larger trees soils are high in clay content high plant populations exist 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.

TREE NUTS Foliar Treatment

Including Almond Beechnut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert Hickory nut Macadamia nut Pecan Pistachio, Walnut (black and English)

Pests Controlled

Rate
Fl Ozs/Acre

Aphids (except black pecan aphid)	1 5 to 3 0
Leafhoppers/Sharpshooters	
Phylloxera spp (leaf infestations)	
Spittlebugs	
Whiteflies	
Black pecan aphid	3 0
Mealybugs	
San Jose scale	

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WRANGLER® INSECTICIDE
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Tree Nuts Foliar Treatment cont d

Restrictions

Pre Harvest Interval (PHI) **7 days**

Minimum interval between applications **6 days**

Maximum WRANGLER Insecticide allowed per season when making foliar applications **10 4 fluid ounces per acre** (0 36 pound active ingredient per acre)

Minimum application volume (water) **50 0 GPA** – ground application **25 0 GPA** – aerial application

Do not apply within 10 days prior to bloom or during bloom or when bees are actively foraging

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uni form coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout field and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests Aerial applications of Wrangler Insecticide may result in slower activity and reduced control relative to results from ground application For tree and vine crops application rates are based on full size mature trees or vines

Applications

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

CHRISTMAS TREE soil treatment

Pests Controlled

Rate
Fl Ozs/Acre

White grub complex
(damage from grubs of Asiatic garden beetle
European and Masked chafer Japanese beetle
and Oriental beetle)

8 0 to 16 0

Restrictions

Maximum Wrangler Insecticide allowed per crop season when making soil applications **16 0 fluid ounces per acre** (0 50 pound active ingredient per acre)

Instructions

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 one of 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 treatment

Pests Controlled

Rate
Fl Ozs/Acre

Aphids
Adelgids
Sawflies

1 6 to 3 2

Restrictions

Pre Harvest Interval (PHI) **7 days**

Maximum Wrangler Insecticide allowed per crop season when making foliar applications **16 0 fluid ounces per acre** (0 5 pound active ingredient per acre)

Applications

Gall forming adelgids – time applications to coincide with full bud swell of earliest bud breaking trees Once galls form spraying will be ineffective

Apply specified rate per acre as a broadcast or directed foliar spray to infested area as pest populations begin to build Thorough uni form coverage is necessary to achieve optimum control Use a spray adjuvant such as LI 700 to improve coverage Wrangler Insecticide may not knock down established and heavy insect populations Two applications may be required to achieve control Scout fields and re treat if needed Tank mix Wrangler Insecticide with other insecticides for knockdown of pests or for improved control of other pests

WRANGLER® INSECTICIDE
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POPLAR/COTTONWOOD soil treatment

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

Pests Controlled	Rate Fl Ozs/Acre
Aphids	8 0 to 16 0
Cottonwood leaf beetle	

Pests/Diseases Suppressed

<i>Phylloxera popularia</i>	8 0 to 16 0
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Restrictions

Maximum Wrangler Insecticide allowed at plant per crop season when making soil applications **16 0 fluid ounces per acre** (0 50 pound active ingredient per acre)

Do not apply pre bloom or during bloom or when bees are actively foraging

Instructions

Apply specified dosage of Wrangler Insecticide in the following method

- 1 Chemigation through low pressure drip irrigation
 For Cottonwood leaf beetle protection against damage will occur when application is made early when the beetles first begin feeding Larger trees may require earlier treatment as a result of slower uptake
- 2 For narrow row cutting orchards/nurseries used for plant propagation shank into root zone followed by adequate irrigation to promote uptake (Adequate irrigation depends on soil moisture level at application Under dry conditions use 0 25 inch per acre)

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

Cutting/Whip Applications See details above for Field Applications

Pests Controlled	Cutting/Whip Soaking Solution Rate Fl Ozs Wrangler Insecticide needed/100 gallons
Cottonwood leaf beetle	6 6 to 13 3 (unhydrated cuttings/whips) 13 3 to 20 0 (partially hydrated cuttings/whip)
Pests Suppressed	6 6 to 13 3 (unhydrated cuttings/whips)
Aphids	13 3 to 20 0 (partially hydrated cuttings/whip)
<i>Phylloxera popularia</i>	

Restrictions

Maximum Wrangler allowed at plant per crop season **16 0 fluid ounces per acre** (0 5 pound active ingredient per acre)

¹Use not permitted in California unless otherwise directed by supplemental labeling

Applications

Moisture content of cuttings/whips prior to application the solution concentration and the length of soaking interval interact to affect the amount of product absorbed into plant material For a constant soaking interval of 24 hours drier cuttings/whips absorb a higher quantity of solution and require a lower concentration Conversely more hydrated cuttings/whips absorb less solution and require a higher concentration Soaking of cuttings/whips should occur in a covered container in absence of UV light Not all *Populus* spp clones/varieties/hybrids have been tested for crop safety Without specific knowledge about a particular *Populus* spp clone/variety/hybrid Loveland Products Inc suggests that small numbers of cuttings/whips of each be treated and evaluated prior to commercial use

Apply Wrangler Insecticide in of the following cuttings/whips soaking methods

For freshly cut (unhydrated) cuttings/whips soaking plant material in specified solution concentration of 24 hours prior to cold storage After removal from cold storage plant as needed

For previously hydrated cuttings/whips removed from cold storage allow plant material to reach room temperature and soak in specified solution concentration for 24 hours prior to planting

Take proper care in disposal of any residual soaking solution Apply solution to existing trees or other registered crops as long as all product label precautions and restrictions are observed

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**WRANGLER® INSECTICIDE
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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 the reach of children preferably in a locked storage area Handle and open container in a manner as to prevent spillage If the container is leaking invert to prevent leakage If container is leaking or material 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 pesticides 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 this container to hold materials other than pesticides or dilute pesticides (rinsate) After emptying and cleaning it may be allowable to temporarily hold rinsate or other pesticide related materials in the container Contact your state regulatory agency to determine allowable practices in your state Once cleaned some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling To find the nearest site contact your chemical dealer or manufacturer or contact The Agricultural Container Recycling Council (ACRC) at www.acrcycle.org If not recycled then puncture and dispose of in a sanitary landfill or incineration or if allowed by state and local authorities by burning If burned stay out of smoke Triple rinse or pressure rinse container (or equivalent) promptly after emptying

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 **Pressure rinse as follows** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds Drain for 10 seconds after the flow begins to drip

For packages greater than 5 gallons and less than 56 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 Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal Repeat this procedure two more times **Pressure rinse as follows** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds Drain for 10 seconds after the flow begins to drip

For packages greater than 56 gallons To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank Fill the container about 10 percent full with water Agitate vigorously or recirculate water with the pump for 2 minutes Pour or pump rinsate into application equipment or rinsate collection system Repeat this rinsing procedure two more times

For refillable containers Refill this container with pesticide only Do not reuse this container for any other purpose Cleaning the container before final disposal is the responsibility of the person disposing of the container Cleaning before refilling is the responsibility of the refiller To clean the container before final disposal empty the remaining contents from this container into application equipment or mix tank Fill the container about 10 percent full with water Agitate vigorously or recirculate water with the pump for 2 minutes Pour or pump rinsate into application equipment or rinsate collection system Repeat this rinsing procedure two more times

For help with any spill leak fire or exposure involving this material call day or night CHEMTREC - 1 800 424 9300

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

BEFORE BUYING OR USING THIS PRODUCT read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability By buying or using this product the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability which no employee or agent of LOVELAND PRODUCTS INC or the seller is authorized to vary in any way

Follow the Directions for Use of this product carefully It is impossible to eliminate all risks inherently associated with the use of this product Crop or other plant injury ineffectiveness or other unintended consequences may result from such risks as weather or crop conditions mixture with other chemicals not specifically identified in this product's label or use of this product contrary to the label instructions all of which are beyond the control of LOVELAND PRODUCTS INC and the seller The buyer or user of this product assumes all such inherent risks

Subject to the foregoing inherent risks LOVELAND PRODUCTS INC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THIS PRODUCT IS SOLD AS IS AND LOVELAND PRODUCTS INC MAKES NO OTHER

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**WRANGLER® INSECTICIDE
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