

# RESTRICTED USE PESTICIDE

DUE TO ACUTE TOXICITY TO HUMANS AND TOXICITY TO BIRDS AND MAMMALS.

For retail sale to use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

# INSECTICIDE



## UYPERA™ C-LV

OXAMYL GROUP 1A INSECTICIDE

### INSECTICIDE/NEMATICIDE

#### ACTIVE INGREDIENT:

Oxamyl [Methyl N'N'-dimethyl-N-[(methylcarbamoyl)oxy]

-1-thioxamimidate] ..... 42%

**Other Ingredients:** ..... 58%

**Total:** ..... 100%

Contains Methanol

*A water-soluble liquid (SL) - 1 gal contains 3.77 lb Active Ingredient.*

**KEEP OUT OF REACH OF CHILDREN  
DANGER/PELIGRO**



## POISON/VENENO

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

See inside booklet for additional Precautionary Statements and Directions For Use.

#### FIRST AID

Contains an N-methyl carbamate that inhibits cholinesterase.

**IF SWALLOWED:** • Call a poison control center or doctor immediately for treatment advice. • Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. • **DO NOT** induce vomiting or give anything by mouth to an unconscious person.

(cont'd next column)

#### BY WT.

**IF INHALED:** • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

**IF ON SKIN OR CLOTHING:** • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

**IF IN EYES:** • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.

**ATROPINE IS AN ANTIDOTE: SEEK MEDICAL ATTENTION AT ONCE IN ALL CASES OF SUSPECTED POISONING.** If symptoms appear (see **SYMPTOMS**), get medical attention.

**SYMPTOMS:** Oxamyl poisoning produces effects associated with anticholinesterase activity which may include weakness, blurred vision, headache, nausea, abdominal cramps, discomfort in the chest, constriction of pupils, sweating, slow pulse, muscle tremors.

#### NOTE TO PHYSICIAN

**TREATMENT:** Atropine sulfate should be used for treatment. Administer repeated doses, 1.2 to 2.0 mg intravenously every 10 to 30 minutes until full atropinization is achieved. Maintain atropinization until the patient recovers. Artificial respiration or oxygen may be necessary. Allow no further exposure to any cholinesterase inhibitor until recovery is assured. **DO NOT** use 2-PAM for exposure to *VYPERA C-LV* alone. However, for exposure to combinations of *VYPERA C-LV* and organophosphorus insecticides, 2-PAM may be used as required to supplement the atropine sulfate treatment. **DO NOT** use morphine.

#### HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-Hour Medical Emergency Assistance (Human or Animal), call: **1-800-222-1222**. For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), call CHEMTREC: **1-800-424-9300**.

EPA Reg. No.: 89167-92-89391



Distributed By:  
**INNICTIS® CROP CARE, LLC**  
1880 FALL RIVER DRIVE, SUITE 100  
Loveland, CO 80538

# PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER/POISON

Fatal if swallowed. May be fatal if inhaled. **DO NOT** breathe vapor or spray mist. Harmful if absorbed through the skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. Contains methanol which may cause blindness.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

### Mixers, loaders, applicators and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils or Viton  $\geq 14$  mils
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing or loading.
- Wear a minimum of a NIOSH-approved elastomeric half mask respirator with organic vapor (OV) cartridges and combination R, or P filters; OR a NIOSH-approved gas mask with OV canisters; OR a NIOSH-approved powered air purifying respirator with OV cartridges and combination HE filters.

See **ENGINEERING CONTROL STATEMENTS** for additional requirements.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## ENGINEERING CONTROL STATEMENTS

### Human flaggers must be in enclosed cabs.

Pilots must use an enclosed cockpit in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]. Pilots must not assist in the mixing and loading operations. In addition to the PPE for all handlers, mixer/loaders supporting aerial applications to cotton must use closed mixing/loading systems that meet the requirements listed in the WPS for agricultural pesticides [40 CFR 170.607(d)(2)(i) &(ii)] for inhalation and dermal protection.

Mixers and loaders supporting use on cotton in California and Arizona must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)]. The system must be designed by the manufacturer to remove a liquid pesticide from its container and transfer it through connecting hoses, pipes, and/or couplings that are sufficiently tight to prevent dermal or inhalation exposure of any person to the pesticide concentrate, use dilution, or rinse solution and must be provided and have immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown: coveralls, chemical-resistant footwear, and the type of respirator required for handlers on this labeling. In addition, handlers:

- May wear long-sleeved shirt and long pants, socks and shoes, chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils or Viton  $\geq 14$  mils, and a chemical-resistant apron, instead of the PPE required for mixers and loaders on this label,
- Must wear protective eyewear if the system operates under pressure.

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

## USER SAFETY RECOMMENDATIONS

### Users should:

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

## ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic organisms (fish and invertebrates) and extremely toxic to birds and mammals. Cover or disc spill areas. Birds and mammals in treated areas may be killed. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. **DO NOT** contaminate water when cleaning equipment or disposing of equipment waste waters.

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 or other pollinating insects are visiting the treatment area

## SURFACE WATER ADVISORY

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application.

A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of oxyamyl from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

## GROUND WATER ADVISORY

This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

## PHYSICAL AND CHEMICAL HAZARDS

Combustible. **DO NOT** use or store near heat or open flame. Keep container closed. Use with adequate ventilation. **DO NOT** mix or allow coming in contact with oxidizing agent or reducing agents. Hazardous chemical reaction may occur.

# DIRECTIONS FOR USE

## Restricted Use Pesticide

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.

Pilots must not assist in the mixing and loading operations.

**VYPERA C-LV** must only be used in accordance with directions on its labeling. INNICTIS CROP CARE, LLC will not be responsible for damages or losses that result from use of this product in a manner that is inconsistent with this labeling. User assumes all responsibility and risks associated with such uses.

## AGRICULTURAL USE REQUIREMENTS

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

**DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours.**

The following PPE is required for early entry into 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:

- Coveralls
- Chemical-resistant gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene Rubber  $\geq 14$  mils, polyethylene, polyvinyl chloride (PVC)  $\geq 14$  mils or Viton  $\geq 14$  mils
- Shoes and socks

## PRODUCT INFORMATION

*VYPERA C-LV* is a water-soluble liquid insecticide product to be diluted with water. *VYPERA C-LV* may also be mixed with refined vegetable oil for cotton applications, only.

### Use Restrictions

- **DO NOT** use in the following counties in New York: Suffolk and Nassau
- Seed piece treatments are prohibited.
- **DO NOT** use in or around home. Residential uses are prohibited. For use only in commercial and farm plantings.
- **DO NOT** apply with aerial application equipment, except for cotton grown in CA, AZ, TX, NC, SC, and GA.
- **DO NOT** apply oxamyl by airblast application

See the **Directions for Use** for each crop for additional restrictions.

See the **TANK MIXING AND COMPATIBILITY** section for tank mixing precautions.

### Use Precautions

- As listed in the **CROP DIRECTIONS FOR USE** section of this label - areas of the Rio Grande Valley include: Brewster, Crane, Crockett, Culberson, El Paso, Hudspeth, Jeff Davis, Kinney, Loving, Maverick, Pecos, Presidio, Reeves, Starr, Sutton, Terrell, Upton, Val Verde, Ward, Webb, Winkler, and Zapata counties.
- All soil applied treatments must be incorporated immediately after application to a depth of at least 2 inches by water or mechanical means. *VYPERA C-LV* should be placed in the root zone of the plant for best results. Use sufficient water to move the treatment of *VYPERA C-LV* at least 2 inches deep into the soil, if irrigation water is being used. **DO NOT** irrigate to point of runoff.

## RESISTANCE- MANAGEMENT RECOMMENDATIONS

For resistance-management, *VYPERA C-LV* contains a Group 1A insecticide. Any insect population may contain individuals naturally resistant to *VYPERA C-LV* and other Group 1A insecticides. The resistant individuals may dominate the insect population if this group of insecticides are used repeatedly in the same fields. Appropriate resistance management strategies should be followed.

To delay insecticide resistance, take the following steps:

- Rotate the use of *VYPERA C-LV* or other Group 1A insecticides within a growing season, or among growing seasons, with different groups that control the same pests. Avoid application of more than the maximum seasonal use rate or the total number of consecutive sprays of *VYPERA C-LV* per season.
- Use tank mixtures with insecticides from a different group that are equally effective on the target pest when such use is permitted. **DO NOT** rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
  - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
  - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
  - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
  - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
  - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticidal activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Adopt an integrated pest management program for insecticide/acaricides use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which considers cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance, contact [Sub-Registrant] at INNVICTIS CROP CARE, LLC at 855-466-8428.

#### Integrated Pest Management

Integrate *VYPERA C-LV* into an overall pest management strategy whenever the use of an insecticide is required. Practices known to aid in pest management include scouting, proper pest identification and proper application timing and should be followed wherever possible. Consult local agricultural or insect control experts for additional IPM strategies established for your area and to understand treatment thresholds and application timing for your area.

#### Crop Rotation and Plant Backs

**DO NOT** plant crops other than those that are registered for use with *VYPERA C-LV* within 4 months after the last application. Cover crops that are planted to build the soil or for erosion control may be planted at any time, but **DO NOT** graze or harvest for food or feed.

#### APPLICATION INFORMATION

Apply treatment at the labeled use rates when insect populations reach locally determined economic thresholds. Consult your local cooperative extension office or qualified expert to determine appropriate threshold levels for treatments for your area.

If needed, follow-up applications of *VYPERA C-LV* may be applied to keep pest populations within threshold limits. The minimum application interval and maximum number of applications for each crop is noted in the crop directions for use section of this label.

*VYPERA C-LV* is a liquid formulation that is soluble in water. Once product is mixed in solution, no further agitation is needed in the tank. However, when treatments are made to cotton using oil, maintain agitation in tank. To obtain thorough and uniform coverage, use sufficient water volume.

*VYPERA C-LV* applications may be made by ground, air or by using chemigation application equipment. Refer to the crop directions for use section for the application equipment that may be used for each crop. **DO NOT** apply with aerial application equipment, except for cotton grown in CA, AZ, TX, NC, SC, and GA. Chemigation for potatoes is limited to overhead sprinkler irrigation only. Chemigation for cotton is limited to drip chemigation only.

#### SPRAY VOLUMES

For applications made by ground, use a minimum of 5 gallons per acre (gpa) of water unless otherwise directed in this label. For applications made by air, use a minimum of 2 gallons per acre (gpa) of water unless otherwise directed in this label.

**Adjuvants:** In some cases where coverage may be difficult to obtain (e.g. dense foliage, closed canopy, waxy leaf surfaces) an adjuvant may improve performance.

#### SPRAY PREPARATION

Spray equipment must be clean and free of pesticide deposits before applying treatments of *VYPERA C-LV*.

#### TANK MIXING AND COMPATIBILITY

Perform a jar test prior to tank mixing to ensure compatibility of *VYPERA C-LV* and other pesticides. Use a clear quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately ½ hour. If the mixture settles, balls-up, forms flakes, sludge, gel, oily film or layers, or other precipitates, **DO NOT** use it because it is not compatible. *VYPERA C-LV* is compatible with many commonly used plant protectants; however, **DO NOT** use with Super Tin, Bordeaux mixtures, lime sulfur or spray oils. **DO NOT** use *VYPERA C-LV* in mixtures that are highly alkaline. For optimum results, buffer the spray solution to pH between 5 and 7. To prevent decreased product performance, use mixtures that are mildly alkaline immediately after mixing. **DO NOT** use in mixtures that are very concentrated. **DO NOT** store spray tank mixture overnight.

#### SPRAY TANK PREPARATION AND TANK MIXTURES

For use on cotton, perform a jar test to determine compatibility before mixing large quantities of *VYPERA C-LV* in vegetable oil.

1. Mix *VYPERA C-LV* and vegetable oil in their relative proportions in a jar. Seal the jar and shake mixture. Allow to stand for 1 to 2 hours.
2. Examine jar to determine if crystals have formed.

3. If no crystals formed, the vegetable oil is compatible for use with *VYPERA C-LV*.
4. If crystals formed: prepare the tank mixture using equal volumes of water and *VYPERA C-LV*, and reduce the amount of vegetable oil in the final mix by the amount of water added.

Add water to the tank until about ¼ to ½ full. If tank mixing with other products, add products to the spray tank in the sequence listed below. If there are no tank mixture materials, add the appropriate amount of *VYPERA C-LV* to the tank. Allow time for complete mixing and dispersion after the addition of each product.

1. Water soluble bags
2. Water dispersible granules
3. Wettable powders
4. Water based suspension concentrates
5. *VYPERA C-LV* and other water soluble concentrates
6. Oil based suspension concentrates
7. Emulsifiable concentrates
8. Adjuvants, surfactants and oils
9. Soluble fertilizers
10. Drift retardants

While maintaining agitation, fill the remainder of the tank with water. If the tank mixture carrier is water, no further agitation is necessary. When using refined vegetable oil, continuous agitation is required for mixing.

**It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statement of each product in the tank mix.**

#### **Sprayer Clean-Up**

Immediately following application of *VYPERA C-LV*, thoroughly clean all mixing and spray equipment. Flush the tank, pump, hoses and boom with several changes of water after removing nozzle tips and screens. Clean nozzle tips and screens separately. Take all necessary safety precautions when cleaning equipment. **DO NOT** clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

#### **MANDATORY SPRAY DRIFT MANAGEMENT**

##### **Aerial Applications:**

- **DO NOT** release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- **DO NOT** apply within 75 feet of a residential area. Residential areas include schools, homes, playgrounds, parks, recreational areas, athletic fields, residential lawns, gardens, and other areas where children may be present.
- **DO NOT** apply during temperature inversions.

##### **Ground Boom Applications:**

- User must only apply with the release height recommended by the manufacturer, but no more than 2 feet above the ground or crop canopy.
- Applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply within 10 feet of a residential area. Residential areas include schools, homes, playgrounds, parks, recreational areas, athletic fields, residential lawns, gardens, and other areas where children may be present.
- **DO NOT** apply during temperature inversions.

#### **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.  
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

#### **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

#### **Controlling Droplet Size – Ground Boom**

- **Volume** - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

#### Controlling Droplet Size – Aircraft

- **Adjust Nozzles** - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

#### BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

#### RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift.

#### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

#### TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

#### TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. 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 air mixing. Avoid applications during temperature inversions.

#### WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

#### Handheld Technology Applications:

- Take precautions to minimize spray drift.

#### CHEMIGATION

##### (For potatoes via overhead sprinkler irrigation only and for cotton via drip chemigation only)

*VYPERA C-LV* may be used in drip (trickle) or strip tubing irrigation systems for nematode suppression in cotton. Apply treatments of *VYPERA C-LV* in potatoes through overhead sprinkler irrigation equipment including: center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, mini (micro) sprinkler, hand move irrigation systems. When applying treatment to potatoes by overhead sprinkler chemigation, center pivot and lateral move irrigation systems are preferred. Other overhead sprinkler systems, such as end tow, side (wheel) roll and solid set may be used if the application of the water is determined to be uniform. **DO NOT** apply treatment of this product through any other type of irrigation system.

- Apply in sufficient water and of sufficient duration such that the labeled rate is applied uniformly to the entire treated area.
- **DO NOT** allow irrigation water to pool or run-off during chemigation.
- **DO NOT** apply when wind speed favors drift beyond the treatment area.
- **DO NOT** apply *VYPERA C-LV* while a drip/irrigation line clean out product is being used as product performance may be reduced.
- Adverse crop response, crop injury, reduced product performance, or illegal pesticide residues can result in the crop from distribution of treated water that is not uniform.
- Contact state extension specialists, equipment manufacturers, or other experts if you have questions about equipment calibration.
- 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.
- Wear personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when *VYPERA C-LV* is in the irrigation water.
- When the application is finished, before stopping the system, allow the entire irrigation and injector system to be thoroughly flushed clean.
- Use a pesticide supply tank for the application of *VYPERA C-LV* in chemigation systems. For best results, buffer the *VYPERA C-LV* injection solution to a pH of 5.0 or lower. Buffer highly alkaline water so that the pH of the spray solution is slightly acidic (pH < 7).
- **DO NOT** connect any irrigation system (including greenhouse systems) used for pesticide applications to a public water system unless the pesticide label-prescribed safety devices are in place.
- Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.
- The maximum chemigation rate for potatoes is 2.0 lbs. ai/A per application. For cotton, the maximum chemigation rate is 0.5 lb. ai/A per application, except Arizona and California. In Arizona and California, the maximum application rate for cotton is 1.0 lb. ai/A per application.

#### Required System Safety Devices

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

5. 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.
6. 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.
7. Chemigation systems connected to public water systems must contain a functional, reduced- pressure zone, backflow 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 the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

#### **Sprinkler Chemigation**

1. End guns must be turned off during the application, if they irrigate non-target areas.
2. It is recommended that nozzles in the immediate area of control panels, chemical supply tanks and system safety devices be plugged to prevent contamination of these areas.
3. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.
4. **DO NOT** apply when system connections or fittings leak or when nozzles **DO NOT** provide uniform distribution.

#### **Drip (Trickle) Chemigation**

1. The system should provide uniform water-flow and should have no leaks.
2. Irrigate cotton crop in a manner to wet the root zone first, then introduce *VYPERA C-LV* for the first  $\frac{2}{3}$  of the irrigation cycle to distribute the material uniformly to the crop root zone being irrigated. Discontinue use of *VYPERA C-LV* long enough to purge the system with fresh water and allow the *VYPERA C-LV* to remain in the root zone of the crop.
3. Drip tape placement is critical. *VYPERA C-LV* applied via drip Chemigation must be in the root zone to be effective. For best results, place the drip tape either on the soil surface near the base of the plant, or buried no more than two inches deep. Emitter spacing should not exceed 12 inches apart.

See list of crops on this label for specific application use rates and additional application information.

#### **Posting of Areas to Be Treated**

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, daycare centers, hospitals, in - patient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to public such as golf courses or retail greenhouses.

Posting must conform to all the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in ENGLISH. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2 ½ inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words "KEEP OUT", followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word "STOP". Below the symbol shall be the words "PESTICIDE IN IRRIGATION WATER". Posting required for Chemigation does not replace other posting and reentry requirements for farm worker safety.

Posting required for chemigation does not replace other posting and reentry requirements for farm worker safety.

**CROP USE SITES**

**COTTON - (AS SPECIFIED)**

Refer to the appropriate table for use directions in your state and apply **VYPERA C-LV** as instructed.

**COTTON - All States, Except Arizona and California**

Crop	Pest	<b>VYPERA C-LV Application Rate</b>	<b>Timing and Method</b>
<b>Cotton</b>	Boll Weevil Cotton Fleahopper Tarnished Plant Bug	4.25 - 17 fl. oz./A	Begin applications when damaging populations appear. Apply treatment at 7-day spray intervals, depending on insect pressure.
	Cotton Leaf Perforator	8.5 - 17 fl. oz./A	Begin applications when damaging populations appear. Apply treatment at 7-day spray intervals, depending on insect pressure.
	Lygus Hesperus (Early-Season)	12.7 - 17 fl. oz./A	Begin applications before populations reach damaging thresholds. For best results, apply treatment at 7-day spray intervals, depending on insect pressure. Insects that move into the treated area after application may not be controlled.
	Lygus Hesperus (Mid- to Late-Season)	17 fl. oz./A	Begin applications before populations reach damaging thresholds. For best results, apply treatment at 7-day spray intervals, depending on insect pressure. Insects that move into the treated area after application may not be controlled.
	Pink Bollworm (Early-Season)	12.7 - 17 fl. oz./A	Begin treatments early in the season (pinhead square program) just before the first susceptible squares and before damaging populations begin to build. For best results, apply 2 to 4 treatments at 7-day intervals, depending on insect pressure.
	Pink Bollworm (Mid- to Late-Season)		Begin treatments before populations reach damaging thresholds. For best results, apply treatment at 7-day spray intervals, depending on insect pressure.
Nematode (Suppression): Lance Nematode ( <i>Hoplolaimus</i> spp.) Reniform Nematode ( <i>Rotylenchulus reniformis</i> ) Root Knot Nematode ( <i>Meloidogyne incognita</i> )			<p>Following a pre-plant application of a soil fumigant, an at-plant application of a contact nematicide, or a nematicide seed treatment, apply treatment of <b>VYPERA C-LV</b> as a broadcast foliar or drip treatment at the rate of 17 fl. oz. per acre when cotton is in the 1<sup>st</sup> to 7<sup>th</sup> true-leaf growth stage. For extended suppression of nematodes, a second foliar or drip treatment may be made 14 days later.</p> <p>Alternatively, a sequential broadcast foliar application of <b>VYPERA C-LV</b> can be made at the rate of 8.5 to 17 fl. oz. per acre following a soil fumigant, or a contact nematicide, or a nematicide seed treatment. Apply the first treatment when cotton is in the 2<sup>nd</sup> to 5<sup>th</sup> true-leaf growth stage and repeat application at 8.5 to 17 fl. oz. per acre 7- to 14-days later. For banded applications, use proportionately less material based on the row spacing and band width applied. Or as an alternate to sequential broadcast foliar applications; sequential drip applications can be made at a use rate of 17 fl. oz. per acre beginning at the 2<sup>nd</sup> to 5<sup>th</sup> true-leaf growth stage and repeated 7-14 days later.</p> <p>Refer to the “<b>CHEMIGATION</b>” section and the “<b>Drip (Trickle) Chemigation</b>” sections of the label for additional information on chemigation and drip applications.</p> <p>To effectively reduce reniform, root knot or lance nematode populations in cotton, applications of <b>VYPERA C-LV</b> must follow the pre-plant application of a soil fumigant, or an at-plant band or in-furrow application of a contact nematicide, or the use of a nematicide seed treatment. This <b>VYPERA C-LV</b> treatment is restricted to use on low to moderate nematode infestations and is intended to supplement early season nematode suppression from soil fumigant or contact nematicide applications or the use of a nematicide seed treatment.</p>
Stink Bugs (Brown Stink Bug, Green Stink Bug, Southern Green Stink Bug)	10.7 - 17 fl. oz./A		Begin applications when stink bugs exceed local population or damaging thresholds. Apply sequential treatments at 7-day intervals as long as stink bug populations or damage exceed local thresholds.
Thrips (Suppression): Tobacco Thrips ( <i>Frankliniella fusca</i> ) Onion Thrips ( <i>Thrips tabaci</i> )	8.5 - 17 fl. oz./A		Apply treatments as broadcast or band applications in sufficient water volume to obtain thorough coverage (minimum of 8 GPA ground and 5 GPA air). All <b>VYPERA C-LV</b> applications must follow a previous at-plant insecticide treatment that has contact or systemic activity on tobacco or onion thrips. Begin applications when cotton reaches the 1 <sup>st</sup> true-leaf and thrips populations or damage exceed local thresholds. Repeat the application at 7 days if re-infestation of adult or immature thrips occurs.



**Application Information:**

Apply *VYPERA C-LV* by ground in sufficient water volume or by air in sufficient water volume or refined vegetable oil (minimum 3 pints of oil per acre) to obtain thorough coverage and penetration of the cotton canopy. When treatments are made in water, buffer the spray solution to pH less than 7. Swath width should not exceed wingspan plus 10 percent. When using hydraulic nozzle systems that are conventional, orient the nozzles 90 degrees to the laminar airflow. Adjust equipment to deliver a uniform spray distribution over the spray swath. Wind conditions and other factors such as temperature and humidity should be assessed and allow for the spray mixture to be delivered to the target area. Maintain continuous agitation during application.

**Restrictions:**

- **DO NOT** apply within 14 days of harvest.
- **DO NOT** graze or feed treated cotton to livestock.
- Applications by hand-wand or soil broadcast to cotton are prohibited.
- **DO NOT** apply with aerial application equipment, except for cotton grown in CA, AZ, TX, NC, SC, and GA.
- **In all registered states (Except AR, AZ, CA, KS, LA, MS (west of 1-55), OK, and TX) and for MS (east of 1-55):**
  - **DO NOT** apply more than 102 fl. oz. (3 lb. ai) of *VYPERA C-LV* per acre per year.
  - **DO NOT** apply more than 8 applications per season.
- **For AR, KS, LA, MS (west of 1-55), OK, and TX:**
  - **DO NOT** apply more than 68 fl. oz. (2 lb. ai) of *VYPERA C-LV* per acre per year.
  - **DO NOT** apply more than 4 applications per season.

**COTTON - Arizona**

Crop	Pest	<i>VYPERA C-LV</i> Application Rate	Timing and Method
Cotton	Cotton Leaf Perforator	17 - 34 fl. oz./A	Begin applications when damaging populations begin to build, and continue at a 6- to 8-day spray interval, depending on insect pressure.
	Lycus Hesperus (Early-Season)	13 - 26 fl. oz./A	Begin applications before populations reach damaging thresholds. For best results, apply treatment at a 6- to 8-day spray interval, depending on insect pressure. If there is moderate to high insect pressure or when applying alone by air use a minimum rate of 26 fl. oz. <i>VYPERA C-LV</i> per acre. Insects that move into the treated area after application may not be controlled.
	Lycus Hesperus (Mid- to Late-Season)	26 - 34 fl. oz./A	Begin applications before populations reach damaging thresholds. For best results, apply treatment at a 6- to 8-day spray interval, depending on insect pressure. If there is moderate to high insect pressure or when applying alone by air use a minimum rate of 34 fl. oz. <i>VYPERA C-LV</i> per acre. Insects that move into the treated area after application may not be controlled.
	Pink Bollworm (Early-Season)	13 - 26 fl. oz./A targeted at adults (moths)	Begin treatments early in the season (pinhead square program) just prior to first susceptible squares and before populations reach damaging thresholds. For optimum performance, make 2 to 3 applications at a 6 to 8-day spray interval, depending on insect pressure. If there is moderate to high insect pressure or when applying alone by air use a minimum rate of 17 fl. oz. <i>VYPERA C-LV</i> per acre. For optimum performance, use cottonseed oil or vegetable oil when treating for pink bollworm moths. For optimum performance on nocturnal moths, apply at night.
	Pink Bollworm (Mid - to Late-Season)	17 - 34 fl. oz./A targeted at adults (moths)	Begin mid- to late-season applications before populations reach damaging thresholds. For best results, apply treatment at a 6- to 8-day spray interval, depending on insect pressure. For optimum performance, use cottonseed oil or vegetable oil when treating for pink bollworm moths. For optimum performance on nocturnal moths, apply at night.
	Thrips (Suppression); Western Flower (Early-Season)	8.5 - 17 fl. oz./A	Begin applications before populations reach damaging thresholds. Apply as a broadcast or band treatment in sufficient water volume to obtain thorough coverage (minimum 10 GPA ground and 5 GPA by air). All <i>VYPERA C-LV</i> treatments must follow a previous at-plant insecticide treatment that has contact or systemic activity on western flower thrips. For optimum performance, apply treatment at a 6- to 8-day spray interval, depending on insect pressure.
	Whitefly	17 - 34 fl. oz./A	Always apply treatment of <i>VYPERA C-LV</i> in a tank-mix combination with a registered whitefly adulticide. For optimum performance, apply treatment at a 7- to 14-day spray interval, depending on insect pressure and rates used.

**Application Information:**

Apply treatment of *VYPERA C-LV* by air or ground application equipment in sufficient water volume to obtain thorough coverage (minimum 5 gallons by air or 10 gallons by ground). For optimum performance, buffer the spray solution to <pH 7.

**Restrictions:**

- **DO NOT** apply within 14 days of harvest.
- **DO NOT** graze or feed treated cotton to livestock.
- Applications by hand-wand or soil broadcast to cotton are prohibited.
- **DO NOT** apply more than 102 fl. oz. (3 lb. ai) of *VYPERA C-LV* per acre per year.
- **DO NOT** apply more than 8 applications per season.

**COTTON - California**

Crop	Pest	<i>VYPERA C-LV</i> Application Rate	Timing and Method
Cotton	Lygus Hesperus (Early-Season)	26 - 34 fl. oz./A	Begin applications before populations reach damaging thresholds. For optimum performance, apply treatment at a 6- to 8-day spray interval, depending on insect pressure. If there is moderate to high insect pressure or when applying alone by air use 34 fl. oz. <i>VYPERA C-LV</i> per acre. Insects that move into the treated area after application may not be controlled.
	Lygus Hesperus (Mid- to Late-Season)	30 - 34 fl. oz./A	Begin applications before populations reach damaging thresholds. For optimum performance, apply treatment at a 6- to 8-day spray interval, depending on insect pressure. If there is moderate to high insect pressure or when applying by air use 34 fl. oz. <i>VYPERA C-LV</i> per acre. Insects that move into the treated area after application may not be controlled.
	Thrips (Suppression): Western Flower (Early-Season)	8.5 - 17 fl. oz./A	Begin applications before populations reach damaging thresholds. Apply as a broadcast or band treatment in sufficient water volume to obtain thorough coverage (minimum 10 GPA ground and 5 GPA by air). All <i>VYPERA C-LV</i> treatments must follow a previous at-plant insecticide treatment that has contact or systemic activity on western flower thrips. For optimum performance, apply treatment at a 6- to 8-day spray interval, depending on insect pressure.

**Application Information:**

Apply treatment of *VYPERA C-LV* by air or ground application equipment in sufficient water volume to obtain thorough coverage (minimum 5 gallons by air or 10 gallons by ground). For optimum performance, buffer the spray solution to <pH 7.

**Restrictions:**

- **DO NOT** apply within 14 days of harvest.
- **DO NOT** graze or feed treated cotton to livestock.
- Applications by hand-wand or soil broadcast to cotton are prohibited.
- **DO NOT** apply more than 102 fl. oz. (3 lb. ai) of *VYPERA C-LV* per acre per year.
- **DO NOT** apply more than 8 applications per season.

**PEANUTS**

**Not Registered for use in California.**

Crop	Pest	<i>VYPERA C-LV</i> Application Rate	Timing and Method
Peanuts	Root Knot (except Javanese) Nematodes - Sting, Ring, and Lesion Thrips	<b>At-Plant Soil Treatment:</b> 34 - 68 fl. oz./A	Apply treatment of <i>VYPERA C-LV</i> in a 7-inch band immediately behind the planter in a minimum of 10 gallons of water per acre. For severe infestations, use the highest rate. Incorporate the band application at least 2 inches into the soil either by placing it in-furrow or by mechanical means.
		<b>Foliar Ground:</b> 17 fl. oz./A	Foliar treatments of <i>VYPERA C-LV</i> are to be used only following soil fumigation, or following pre-plant or at planting soil application of <i>VYPERA C-LV</i> or other contact nematicides. Apply treatment of 17 fl. oz. <i>VYPERA C-LV</i> per acre as a band or broadcast spray beginning at 14 to 28 days after peanut emergence. Apply a second treatment of 17 fl. oz. <i>VYPERA C-LV</i> per acre 14 days later. If needed, 2 additional applications of 17 fl. oz. <i>VYPERA C-LV</i> per acre can be made on a 14-day application schedule. Apply treatment in sufficient water volume to obtain thorough plant coverage (minimum 8 GPA ground and 5 GPA air). Use proportionately less material for band applications, based on row spacing and band width applied.

**Restrictions:**

- **DO NOT** apply more than 136 fl. oz. (4 lb. ai) of *VYPERA C-LV* per acre per year.
- **DO NOT** apply more than 5 applications per season.

**POTATOES - (FOR STATES SPECIFIED)**

Refer to the appropriate table for use directions in your state and apply **VYPERA C-LV** as instructed.

**POTATOES - All States, except Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, and Texas (EXCEPT the Rio Grande Valley of Texas, as specified in the "Product Information" section). The Rio Grande Valley of Texas may also follow these directions.**

Crop	Pest	VYPERA C-LV Application Rate	Timing and Method
Potatoes	Aphids Flea Beetle Potato Leafhopper Tarnished Plant Bug	<b>Foliar Ground, Chemigation:</b> 17 - 34 fl. oz./A	Apply treatment when insects first appear. Repeat at specified spray intervals if needed to maintain control. Use a low use rate for light infestations and a high use rate for severe infestations. Use at least 7 gallons of water per acre for applications made by air. For optimum performance, in areas with high temperature and low humidity conditions, use 10 gallons of water per acre for use by air. For overhead chemigation applications, use a higher rate of <b>VYPERA C-LV</b> . The recommended maximum water volumes for overhead chemigation applications is 0.1 to 0.2 acre inches of water. Buffer the chemigation injection solution to a pH of 5.
	Colorado Potato Beetle	<b>Foliar Ground, Chemigation:</b> 8.5 - 34 fl. oz./A	Refer to the " <b>CHEMIGATION</b> " section for additional information on chemigation.  <b>Aphids:</b> For optimum performance, begin applications of <b>VYPERA C-LV</b> early in the season before aphid populations begin to build. Treatments of systemic aphicides made at-plant followed by a mid-season application of <b>VYPERA C-LV</b> , applied before the previous treatment starts to breakdown, have provided the best season-long control. To maintain control, apply treatment of <b>VYPERA C-LV</b> at a 14-day spray schedule when aphid pressure is high. When aphid pressure is low to moderate, apply treatments at a spray interval not to exceed 21 days.  <b>Colorado Potato Beetle:</b> Use 34 fl. oz. per acre at a 5- to 7-day spray interval when applying to potatoes using overhead sprinkler chemigation for the control of Colorado potato beetle.
	Two-Spotted Spider Mite (Suppression)	<b>Foliar Ground, Chemigation:</b> 34 fl. oz./A	<b>Two-Spotted Spider Mite:</b> The combined effects of maintaining adequate populations of beneficial insects and the use of <b>VYPERA C-LV</b> provides suppression of two-spotted spider mite populations. Mite suppression may be reduced by the use of other insecticides that may harm beneficial insects or by movement of mites coming in from adjacent fields. Apply treatment of <b>VYPERA C-LV</b> before mite populations begin to build. Repeat application at a 7- to 14-day spray interval. If mite populations continue to build, use an alternative miticide with a different mode-of-action.

**Nematode (Suppression): Root Knot (except Javanese), Sting, Lesion, and Stubby Root:**

For applications made by ground or overhead chemigation applications for the suppression of Root Knot (except Javanese) Sting, Lesion and Stubby Root Nematodes. When applied as directed, **VYPERA C-LV** suppresses nematode populations and results in reduced crop damage. Nematode suppression is considered a reduction in nematode related crop injury compared to untreated crops. **VYPERA C-LV** product performance is related to nematode population pressure. Fields that have high nematode counts or have a recent history of significant nematode related crop injury should be treated with the most effective soil fumigant program available in conjunction with **VYPERA C-LV**. Refer to the root knot, stubby root and sting nematode guidance on applications to specific nematode populations in the sections below. Base nematode control programs on soil samples taken with sufficient time to apply treatment of a soil fumigant if needed. Consider sampling for nematodes in the fall since fumigation performance is often optimal in the fall. For maximum plant protection, use a pre-plant fumigant, shanked-in, and follow with the recommended **VYPERA C-LV** spray program. Use foliar applications by ground equipment only where it is not possible to apply treatment by chemigation. When ground applications are made, incorporate **VYPERA C-LV** with enough irrigation water to completely cover all tubers in the hill immediately after application. Nematode damage may occur because ground applications are not as effective as chemigation. For overhead chemigation applications, apply enough irrigation water to completely cover the entire tuber/root zone, especially tubers at the bottom of the hill. For sandy soil types, use approximately 0.5 inches of irrigation water. **VYPERA C-LV** may be applied with lower amounts of water (0.1 to 0.2-acre inch) with center pivot or other moving irrigation systems provided this application is immediately followed by a standard irrigation so that the total amount of water applied is approximately 0.5 inches. For solid set and wheel-line systems, inject the appropriate amount of **VYPERA C-LV** at the start of the irrigation cycle and adjust the flow rate of the injection equipment so that **VYPERA C-LV** is applied during the first half of the irrigation cycle. Buffer the **VYPERA C-LV** injection solution to a pH of 5 or lower. Phosphoric acid or N-phurric fertilizer solutions may be used to buffer high pH irrigation water used with **VYPERA C-LV** applications.

**At-Plant In-Furrow Soil Treatment:** An at-plant soil application is recommended as the first application for maximum suppression of nematodes. Use 34 - 68 fl. oz./A in at least 20 gal water/A when applying at-plant soil treatment for suppression of nematodes. Apply **VYPERA C-LV** as a concentrated band spray in the seed row with the spray nozzle positioned behind the planter tube. Adjust the nozzle height to produce a spray pattern that is 6-8 inches wide that covers the bottom and sides of the furrow. Incorporate **VYPERA C-LV** treatment at least 2 inches in depth.

**Root-Knot Nematode Treatment Options:** The use of **VYPERA C-LV** in potatoes for suppression of nematodes is based on the life cycle of the Columbia Root-Knot Nematode as determined by university nematologists. A degree-day model is available to track nematode development. To properly time certain **VYPERA C-LV** treatments, you must have access to degree-day data for your area.

**Treatment Options Based on Nematode Populations in the Columbia Basin of Oregon and Washington:** For maximum plant protection, use a pre-plant fumigant, shanked-in, and follow the recommended **VYPERA C-LV** treatment program.

**Note:** For optimum performance, make all applications other than in-furrow via chemigation.  
Choose one of the following two treatment programs when pre-plant soil samples show 0 to 50 root-knot nematodes per 250 cc of soil:

Best Treatment Program	Alternate Treatment Program
34 - 68 fl. oz./A in-furrow at-planting	Skip in-furrow
34 fl. oz./A at crop emergence	34 fl. oz./A at crop emergence
34 fl. oz./A at 1440 degree-days F (800 DD C)	34 fl. oz./A at 1440 degree-days F (800 DD C)
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later
Continue application of 34 fl. oz./A every 14 days until 7 days before digging	Continue application of 34 fl. oz./A every 14 days until 7 days before digging

When pre-plant soil samples are greater than 50, but not more than 150 root-knot nematodes per 250 cc of soil:

Start with a fumigant that is applied pre-plant using a soil injection (shank) system.
34 - 68 fl. oz./A in-furrow at-planting
34 fl. oz./A at crop emergence
34 fl. oz./A at 1440 degree-days F (800 DD C)
34 fl. oz./A 7 days later
34 fl. oz./A 7 days later
34 fl. oz./A 14 days later
Continue application every 14 days until 7 days before digging

**Treatment Options Based on Root-Knot Nematode Populations in All Other Areas:** Choose one of the following treatment programs based on pre-plant soil nematode counts when pre-plant soil samples are 0 to 150 per 250 cc of soil.

Use the Maximum Protection program for high nematode counts (not exceeding 150 nematodes per 250 cc of soil) and the Alternate Program for low counts (close to zero nematodes per 250 cc of soil):

For Maximum Protection	Next Best Program	Alternate Treatment Program
Shanked-in fumigant pre-plant	34 - 68 fl. oz./A in-furrow at-planting	34 fl. oz./A at 1440 degree-days F (800 DD C)
34 - 68 fl. oz./A in-furrow at-planting	34 fl. oz./A at 1440 degree-days F (800 DD C)	34 fl. oz./A 14 days later
34 fl. oz./A at 1440 degree-days F (800 DD C)	34 fl. oz./A 14 days	Continue application of 34 fl. oz./A every 14 days until 7 days before digging
34 fl. oz./A 14 days later	Continue application of 34 fl. oz./A every 14 days until 7 days before digging	
Continue application of 34 fl. oz./A every 14 days until 7 days before digging		

**Potatoes Following Alfalfa:** For best results for potatoes that are planted following alfalfa, use the "For Maximum Protection" program outlined in the table above. Alfalfa roots can host large numbers of root-knot nematode eggs that will not be reflected in soil sampling. This can underestimate the true nematode population. Under these conditions, nematode-related crop damage can occur even with the best application program. For optimum performance, disc alfalfa roots thoroughly and allow as much time as possible for the alfalfa roots to break down before starting the "For Maximum Protection" program.

**IMPORTANT:** For long-season potatoes, estimate the number of treatments needed to protect the crop up until the pre-harvest interval of 7 days before digging. Ensure that you will have enough *VYPERA C-LV* to cover the entire crop season. Use of *VYPERA C-LV* is not recommended where root-knot nematode counts are higher than 150 per 250 cc of soil or where the total estimated amount of product needed to protect the crop right up to harvest exceeds the seasonal use rate in potatoes.

**Lesion, Sting, and Stubby Root Nematode Treatment Programs:** There are no population limits for use of *VYPERA C-LV* on lesion nematodes. For stubby root and sting nematodes, *VYPERA C-LV* can be used when soil samples indicate 0-50 per 250 cc of soil. Use a shanked-in fumigant followed by a *VYPERA C-LV* treatment program if stubby root and sting populations are higher than 50 per 250 cc of soil. Choose one of the following two treatment options:

Best Treatment Program	Alternate Treatment Program
34 fl. oz./A in-furrow at-planting	Skip in-furrow
34 fl. oz./A at crop emergence prior to tuber initiation (hooking)	34 fl. oz./A at crop emergence prior to tuber initiation (hooking)
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later

**Note:** For optimum performance, all applications other than in-furrow should be made via chemigation. Applications made after tuber initiations may not control Corky Ringspot disease that is vectored by the Stubby-Root Nematode. If a field has a history of Corky Ringspot or if there is reason to believe that Corky Ringspot could result, use the labeled rate of a shanked-in fumigant and follow with the treatment program that starts with an in-furrow application.

**Restrictions:**

- In the Rio Grande Valley of Texas as specified above and all states except, AL, AR, CT, DE, FL, GA, KS, LA, MA, MD, ME, MS, NC, NH, NJ, NY, OK, PA, RI, SC, TX, VA, and VT:
  - **DO NOT** apply more than 2.1 gal (268.8 fl. oz.) (8 lb. ai) of *VYPERA C-LV* per acre per year.
  - **DO NOT** apply more than 8 applications per crop.
  - **DO NOT** apply within 7 days of harvest.
- For CT, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VA, and VT:
  - **DO NOT** apply more than 1.6 gal (204 fl. oz.) (6 lb. ai) of *VYPERA C-LV* per acre per year.
  - **DO NOT** apply more than 8 applications per crop.
  - **DO NOT** apply within 7 days of harvest.

Refer to the following section for seasonal use rates in AL, AR, FL, GA, KS, LA, MS, NC, OK, SC, and TX (outside the Rio Grande Valley).

**POTATOES - Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, and Texas (EXCEPT the Rio Grande Valley of Texas, as specified in the "Product Information" section).**

Crop	Pest	<i>VYPERA C-LV</i> Application Rate	Timing and Method
Potatoes	Aphids Flea Beetle Potato Leathopper Tarnished Plant Bug	<b>Foliar Ground, Chemigation:</b> 17 - 34 fl. oz./A	Apply treatment when insects first appear. Repeat at specified intervals to maintain control, if needed. The minimum treatment interval is 14 days. Use another effective product if an application is needed before the 14-day interval is reached. Use a lower rate for light infestations and a higher use rate (within specified range) for severe infestations. Use at least 7 gallons of water per acre for applications made by air. For optimum results, in areas with high temperature and low humidity conditions, use 10 gallons of water per acre for applications made by air. For overhead chemigation applications, use a higher rate of <i>VYPERA C-LV</i> . The recommended maximum water volumes for the overhead chemigation applications are 0.1 to 0.2 acre inches of water. Buffer the chemigation injection solution to a pH of approximately 5. <b>Aphids:</b> <i>VYPERA C-LV</i> works best by making early season applications before aphid populations begin to build. Treatments of systemic aphicides made at-plant followed mid-season by <i>VYPERA C-LV</i> , applied before the previous treatment starts to breakdown, have provided the best season-long control. To maintain control, apply treatment of <i>VYPERA C-LV</i> at a 14-day interval when aphid pressure is high. When aphid pressure is low to moderate, apply at an application interval not to exceed 21 days. <b>Colorado Potato Beetle:</b> For the control of Colorado potato beetle, when making treatments to potatoes using overhead sprinkler chemigation use 34 fl. oz. per acre.
	Colorado Potato Beetle	<b>Foliar Ground, Chemigation:</b> 8.5 - 34 fl. oz./A	<b>Colorado Potato Beetle:</b> For the control of Colorado potato beetle, when making treatments to potatoes using overhead sprinkler chemigation use 34 fl. oz. per acre.
	Two-Spotted Spider Mite (Suppression)	<b>Foliar Ground, Chemigation:</b> 34 fl. oz./A	<b>Two-Spotted Spider Mite:</b> The combined effects of maintaining adequate populations of beneficial insects and the use of <i>VYPERA C-LV</i> provides suppression of two-spotted spider mite populations. Mite suppression may be reduced by the use of other insecticides that may harm beneficial insects or by movement of mites coming in from adjacent fields. Apply treatment of <i>VYPERA C-LV</i> before mite populations begin to build. Repeat application at a 14-day spray interval. If mite populations continue to build, use an alternative miticide with a different mode-of-action.

**Nematode (Suppression): Root Knot (except Javanese), Sting, Lesion, and Stubby Root – ground or overhead chemigation:** *VYPERA C-LV* suppresses nematode populations and results in reduced crop damage when used as directed. Nematode suppression is considered a reduction in nematode related crop injury compared to untreated crops. *VYPERA C-LV* product performance is related to nematode population pressure. Fields that have high nematode counts or have a recent history of significant nematode related crop injury should be treated with the most effective soil fumigant program available in conjunction with the use of *VYPERA C-LV*. Refer to root knot, stubby root and sting nematode guidance on treatment of specific nematode populations in the sections below. Determine nematode control programs on soil samples taken with sufficient time to apply treatment of a soil fumigant if determined to be necessary.

Consider sampling for nematodes in the fall since fumigation performance is often optimal in the fall. For maximum plant protection, use a pre-plant fumigant, shanked-in, and follow with the recommended *VYPERA C-LV* spray program. Use foliar applications by ground equipment only where it is not possible to apply treatment by chemigation. When ground applications are made, incorporate *VYPERA C-LV* with enough irrigation water to completely cover all tubers in the hill immediately after application. Nematode damage, may occur because ground applications are not as effective as chemigation. For overhead chemigation applications, apply enough irrigation water to completely cover the entire tuber/root zone, especially tubers at the bottom of the hill. For sandy soil types, use approximately 0.5 inches of irrigation water. *VYPERA C-LV* may be applied with lower amounts of water (0.1 to 0.2-acre inch) with center pivot or other moving irrigation systems provided this application is immediately followed by a standard irrigation so that the total amount of water applied is approximately 0.5 inches. For solid set and wheel-line systems, inject the appropriate amount of *VYPERA C-LV* at the start of the irrigation cycle and adjust the flow rate of the injection equipment so that *VYPERA C-LV* is applied during the first half of the irrigation cycle. Buffer the *VYPERA C-LV* injection solution to a pH of 5 or lower. Phosphoric acid or N-phurric fertilizer solutions may be used to buffer high pH irrigation water used with *VYPERA C-LV* applications.

**At-Plant In-Furrow Soil Treatment:** An at-plant soil application is recommended as the first application for maximum suppression of nematodes. Use 34 - 68 fl. oz./A in at least 20 gal water/A when applying at-plant soil treatment for suppression of nematodes. Apply treatment of *VYPERA C-LV* as a concentrated band spray in the seed row with the spray nozzle positioned behind the planter tube. Adjust the nozzle height to produce a spray pattern that is 6-8 inches wide that covers the bottom and sides of the furrow. Incorporate *VYPERA C-LV* treatment at least 2 inches in depth.

**Root-Knot Nematode Treatment Options:** The use of *VYPERA C-LV* in potatoes for suppression of nematodes is based on the life cycle of the Columbia Root-Knot Nematode as determined by university nematologists. A degree-day model is available to track nematode development. To properly time certain *VYPERA C-LV* treatments, you must have access to degree-day data for your area.

**Treatment Options Based on Nematode Populations in the Columbia Basin of Oregon and Washington:** For maximum plant protection, use a pre-plant fumigant, shanked-in, and follow the recommended *VYPERA C-LV* treatment program. Note: For optimum performance, make all applications other than in-furrow via chemigation.

**Treatment Options Based on Root-Knot Nematode Populations:** When pre-plant soil samples are 0 to 150 per 250 cc of soil, choose one of the following treatment programs based on pre-plant soil nematode counts.

Use the Maximum Protection program for high nematode counts (not exceeding 150 nematodes per 250 cc of soil) and the Alternate Program for low counts (close to zero nematodes per 250 cc of soil):

For Maximum Protection	Next Best Program	Alternate Treatment Program
Shanked-in fumigant pre-plant	34 - 68 fl. oz./A in-furrow at-planting	34 fl. oz./A at 1440 degree-days F (800 DD C)
34 - 68 fl. oz./A in-furrow at- planting	34 fl. oz./A at 1440 degree-days F (800 DD C)	34 fl. oz./A 14 days later
34 fl. oz./A at 1440 degree-days F (800 DD C)	34 fl. oz./A 14 days	Apply 2 more treatments at 34 fl. oz./A 14 days apart
34 fl. oz./A 14 days later	Apply 2 more treatments at 34 fl. oz./A 14 days apart	
Apply 2 more treatments at 34 fl. oz./A 14 days apart		

**Potatoes Following Alfalfa:** For best results for potatoes that are planted following alfalfa, use the "**For Maximum Protection**" program outlined in the table above. Alfalfa roots can host large numbers of root-knot nematode eggs that will not be reflected in soil sampling. This can underestimate the true nematode population. Under these conditions, nematode-related crop damage can occur even with the best application program. For optimum performance, disc alfalfa roots thoroughly and allow as much time as possible for the alfalfa roots to break down before starting the "**For Maximum Protection**" program.

**IMPORTANT:** This *VYPERA C-LV* program may not provide adequate nematode protection for long season potatoes. Consider an alternative nematode program. *VYPERA C-LV* is not recommended when root-knot nematode counts are higher than 150 per 250 cc of soil.

**Lesion, Sting, and Stubby Root Nematode Treatment Programs:** There are no population limits for use of *VYPERA C-LV* on lesion nematodes. For stubby root and sting nematodes, *VYPERA C-LV* can be used when soil samples indicate 0-50 per 250 cc of soil. Use a shanked-in fumigant followed by a *VYPERA C-LV* treatment program if stubby root and sting populations are higher than 50 per 250 cc of soil.

Choose one of the following two treatment options:

Best Treatment Program	Alternate Treatment Program
34 fl. oz./A in-furrow at-planting	Skip in-furrow
34 fl. oz./A at crop emergence prior to tuber initiation (hooking)	34 fl. oz./A at crop emergence prior to tuber initiation (hooking)
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later
34 fl. oz./A 14 days later	34 fl. oz./A 14 days later

**Note:** For optimum performance, all applications other than in-furrow should be made via chemigation. Applications made after tuber initiation may not control Corky Ringspot disease that is vectored by the Stubby- Root Nematode. If a field has a history of Corky Ringspot or if there is reason to believe that Corky Ringspot could result, use the labeled rate of a shanked-in fumigant and follow with the treatment program that starts with an in-furrow application.

**Restrictions:**

- In AL, AR, FL, GA, KS, LA, MS, NC, OK, SC, and TX (except the Rio Grande Valley of TX):
- **DO NOT** apply more than 1.6 gal (204 fl. oz.) (6 lb. ai) of *VYPERA C-LV* per acre per year.
- **DO NOT** apply more than 4 applications per crop.
- Minimum application treatment interval (days): 14
- **DO NOT** apply within 7 days of harvest.

**TOBACCO**

Crop	Pest	<i>VYPERA C-LV</i> Application Rate	Timing and Method
<b>Tobacco</b>	Root Knot (except Javanese) Nematodes- Lesion Flea Beetles	<b>Broadcast and Bed treatment:</b> Apply a broadcast spray of 68 fl. oz./A in a minimum of 40 gal of water	<i>VYPERA C-LV</i> may be applied to the soil as a band treatment or by broadcast application, disced, and bedded. For optimum performance, transplant the tobacco within 24 hours after treatment to the soil. Thoroughly incorporate to 4 to 6 inches in depth and bed the field in such a way that only treated soil is used to form the beds.
		<b>Row Treatment:</b> 68 fl. oz. in an 18 to 24 inch band in a minimum of 20 gal of water/A of tobacco (12,000 row-feet)	<i>VYPERA C-LV</i> may be applied to the soil as a band treatment or by broadcast application, disced, and bedded. For optimum performance, transplant the tobacco within 24 hours after treatment to the soil. Thoroughly incorporate with a rotary tiller to 4 to 6 inches in depth.

**Restriction:**

- **DO NOT** apply more than 68 fl. oz. (2 lb ai) of *VYPERA C-LV* per acre per year.

SPECIMEN

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage and disposal.

### **Pesticide Storage**

Store product in original container only at temperatures of 45 °F or higher. Not for use or storage in or around the home. **DO NOT** subject to temperatures below 32 °F.

### **Pesticide Disposal**

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Container Handling [less than 5 gallons]**

Non-refillable container. **DO NOT** reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

### **Container Handling [greater than 5 gallon]**

Refillable container. 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 person refilling. To clean 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 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**DO NOT USE CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER!**

### **CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of INNVICTIS CROP CARE, LLC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold INNVICTIS CROP CARE, LLC and Seller harmless for any claims relating to such factors.

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