

264-379

5/22/2001

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 22 2001

Lizabeth A. Rea
Aventis Crop Science
PO Box 12014, 2 TW Alexander Dr
Research Triangle Park, NC 27709

Subject: Larvin brand 3.2 thiodicard insecticide/ovicide
EPA Reg. # 264-379
label amendment submitted 5/9/01
accepted with comments

Dear Ms. Rea:

The revised labeling reference to above, submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable provided you incorporate the changes required by the Agency as listed below.

Topic	Action required
Precautionary Statements PPE page 2	1) Change all occurrences of "waterproof gloves" to "chemical resistant gloves" in this section. 2) For mixers/loaders and others exposed to the concentrate change "shoes plus socks" to "chemical resistant footwear plus socks."
Agricultural Use Requirements page 3	For early entry, change "waterproof gloves" to "chemical resistant gloves."
Directions for Use Spray drift management page 5	In first sentence in "Swath Adjustment" section change "displaced downward" to "displaced downwind."
Directions for Use Sweet Corn	Under column for "Use Restrictions" remove "after silk initiation" so that initial sentence reads: "Do not exceed 7.5 pounds of active ingredient (300 fluid ounces of this product) per acre per season."

Submit two (2) copies of your final printed labeling incorporating the above changes prior to releasing your product for shipment. If the above provisions are not complied with the registration will be subject to cancellation in accordance with FIFRA Section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A copy of your label stamped "accepted with comments" is enclosed for your records. If you have any questions please contact me at (703) 308-9423 or Harris.Thomas@EPA.gov.

Sincerely yours,

Thomas C. Harris
Insecticide / Rodenticide Branch
Registration Division (7505C)
Office of Pesticide Programs

enclosure

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RESTRICTED USE PESTICIDE

Due to Avian, Aquatic and Small Mammal Toxicity
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification.

LARVIN[®] brand 3.2 Thiodicarb Insecticide/Ovicide Aqueous

Flowable For Ag or Commercial Use Only

ACCEPTED
with COMMENTS
In EPA Letter Dated:
MAY 22 2001

ACTIVE INGREDIENT

THIODICARB: Dimethyl N, N' [thiobis [(methylimino) carbonyloxy]] bis [ethanimidothioate].....

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 264-379..... 34% by wt.

INERT INGREDIENTS.....

..... 66% by wt.

Contains 3.2 pounds active thiodicarb per U.S. gallon

EPA Reg. No. 264-379

EPA Est. No. 264-MO-02

KEEP OUT OF REACH OF CHILDREN

WARNING AVISO

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.)

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** Information Call 1-888-AVENTIS (1-888-283-6847)

FIRST AID

Thiodicarb is an N-methyl carbamate.

IF SWALLOWED:	<ul style="list-style-type: none"> • Immediately call a poison control center or doctor for treatment advice. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Have person sip a glass of water if able to swallow. • Do not give anything by mouth to an unconscious person.
IF IN EYES:	<ul style="list-style-type: none"> • 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.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • 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 INHALED:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.

For **MEDICAL** Emergencies Call 24 Hours A Day 1-800-334-7577.

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

GENERAL

Contact a physician immediately in all cases of suspected poisoning. If breathing stops, establish an airway, start artificial respiration, and provide oxygen. Make certain to remove all sources of continuing contamination. Remove clothing and wash skin and hair immediately with large amounts of water. Transport the patient to a physician or hospital immediately and SHOW A COPY OF THIS LABEL TO THE PHYSICIAN. If poisoning is suspected in animals, contact a veterinarian.

NOTE TO PHYSICIAN

All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.

This product contains an N-methyl carbamate insecticide, which is a cholinesterase inhibitor. Overexposure to this substance may cause toxic signs and symptoms due to stimulation of the cholinergic nervous system. These effects of overexposure are spontaneously and rapidly reversible. Gastric lavage

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may be used if this product has been swallowed. LARVIN® poisoning may occur rapidly after ingestion and prompt removal of stomach contents is indicated.

Specific treatment consists of parenteral atropine sulfate. Caution should be maintained to prevent over atropinization. Mild cases may be given 1 to 2 mg intramuscularly every 10 minutes until full atropinization has been achieved and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until fully atropinized, then intramuscularly every 30 to 60 minutes as needed to maintain the effect for at least 12 hours. Dosages for children should be appropriately reduced. Complete recovery from overexposure is to be expected within 24 hours.

Narcotics and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-aldoxime methiodide) are NOT recommended unless organophosphate intoxication is also suggested.

To aid in confirmation of a diagnosis, urine samples should be obtained within 24 hours of exposure and immediately frozen. Analyses will be arranged by Aventis CropScience.

Consultation on therapy can be obtained at all hours by calling the Aventis CropScience emergency number : 1-800-334-7577.

PRECAUTIONARY STATEMENTS

WARNING

HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)

Illness may result rapidly following overexposure to this product. May be fatal if swallowed. Harmful if inhaled or absorbed through the skin. May be irritating to eyes and may cause mild skin sensitization. Do not take internally. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Keep away from domestic animals. Discontinue use if allergic reaction occurs. Do not eat or use tobacco while using this product.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Salivation, Muscle tremors, Nausea, Watery eyes, Difficult breathing, Vomiting, Pinpoint eye pupils, Excessive sweating, Diarrhea, Blurred vision, Abdominal cramps, Weakness, Headache.

IN SEVERE CASES, CONVULSIONS, UNCONSCIOUSNESS, AND RESPIRATORY FAILURE MAY OCCUR.

ANTIDOTE STATEMENT: ATROPINE SULFATE IS HIGHLY EFFECTIVE AS AN ANTIDOTE. See NOTE TO PHYSICIAN.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, and others exposed to the concentrate, and cleaners/repairers of equipment must wear a long-sleeve shirt and long pants, shoes plus socks, waterproof gloves, chemical-resistant apron and a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any R, P or HE filter.

Applicators, flaggers and others exposed to the dilute must wear a long-sleeve shirt and long pants and shoes plus socks.

In addition, applicators using hand held equipment must wear waterproof gloves.

Discard clothing and 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, use detergent and hot water. Keep and wash PPE separately from other laundry.

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. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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 fish, aquatic invertebrates and mammals. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from area treated. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

This product is toxic to bees exposed to direct treatment. Do not apply when bees are actively visiting the treatment area.

GROUND WATER ADVISORY STATEMENT

Methomyl (a major degradate of thiodicarb) has been detected in ground water. Methomyl is known to leach through soil into ground water under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

SURFACE WATER ADVISORY STATEMENT

This chemical can contaminate surface water through spray drift. Under some conditions, both the parent thiodicarb and its major degradate, methomyl, have a high potential for runoff into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

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GENERAL INFORMATION

LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide is an aqueous flowable formulation that readily disperses in water for spraying by ground or air equipment. Directions on this label are based on tests and field experience relating to effectiveness, impact on environment and residues remaining in food and feed. **READ THE ENTIRE LABEL AND OBSERVE ALL LABEL DIRECTIONS AND PRECAUTIONS BEFORE USE.**

DIRECTIONS FOR USE

**It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.
Read entire label before using this product.**

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 regulations.

Do not use this product except as directed on this label or on other Aventis CropS supplemental labeling for this product. Applications at higher rates or at more frequent intervals than is stated on the label may result in illegal residues in crops, meat and milk.

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 intervals. 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.

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, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

See Precautionary Statement, Statement of Practical Treatment, and Note to Physician for information on accidental exposures.

STORAGE AND DISPOSAL

STORAGE

Do not store in or around the home. Store unused product in a cool, ventilated, dry, locked area. Do not allow prolonged storage in areas where temperatures frequently exceed 115°F (46°C). **NEVER TRANSFER THIS PRODUCT TO ANOTHER CONTAINER FOR STORAGE.**

If container is damaged, before clean-up, put on long-sleeved shirt and long pants, waterproof gloves, shoes plus socks and chemical-resistant headgear for overhead exposure.

PESTICIDE DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Contamination with this product will render water, food or feed unfit for human or animal consumption. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL

NEVER REUSE EMPTY CONTAINERS. Triple rinse or equivalent. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If container is burned, stay out of smoke.

RETURNABLE -- REFILLABLE CONTAINERS

After use, return the container to the point of purchase or designated locations. This container must only be refilled with LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide. **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.** Prior to refilling, inspect thoroughly for damage such as cracks, punctures, abrasions and damaged or worn out threads on closure devices. Do not refill or transport damaged or leaking containers. Check for leaks after refilling and before transportation. If the container is not being refilled, return it to the point of purchase.

ACCIDENTS: In case of a major spill of LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide
TELEPHONE (24 HOURS A DAY) IN THE U.S.A. 1-800-334-7577.

In case of minor spills or leaks follow all precautions indicated above and cleanup immediately. Soak up with sand, earth or other suitable material and dispose of wastes and broken or empty containers in a landfill approved for pesticide use.

GENERAL DIRECTIONS

SPRAY PREPARATION: TO ASSURE A UNIFORM PRODUCT, AGITATE OR SHAKE ALL CONTAINERS OF THIS PRODUCT PRIOR TO USE. Remove oil, rust, scale, pesticide residues and other foreign matter from sprayer and strainer. Flush with clean water. Use 50 mesh screens or equivalent slotted strainers in spray system. To prepare for spraying, fill tank to approximately 1/2 the needed volume of water. Add the required amount of this insecticide and mix thoroughly by mechanical or hydraulic agitation. Finish filling tank with water to desired volume and thoroughly mix. Do not store spray mixture for prolonged periods. If tank mixes are to be used, LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide must be fully dispersed in water first, followed by the addition of the intended tank-mix material.

COMPATIBILITY: Thiodicarb Insecticide when diluted with an equal volume of water, is physically compatible with a wide range of commonly used spray products, but the full range of compatibilities under local conditions is not known. Therefore, it is essential that before using LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide in any tank mixture the compatibility of the mixture be established. Add a small amount of this product to an equal volume of water in a small container and then add the other pesticide or spray product and mix thoroughly.

DO NOT USE MIXTURES THAT CURDLE, PRECIPITATE, OR GREASE. THIS PRODUCT IS NOT COMPATIBLE WITH NON-EMULSIFIED VEGETABLE OR CROP OIL DILUENTS. FOR BEST RESULTS, SPRAY MIXTURES SHOULD BE USED IMMEDIATELY AFTER MIXING WITH ADEQUATE AGITATION.

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NOTE: Thiodicarb Insecticide is hydrolytically sensitive to degradation of active ingredient by strong acids, strong bases, and certain heavy metal oxides and salts of certain fungicides. Degradation can cause reduced effectiveness, plant phytotoxicity and increased handling hazards. **DO NOT USE THIS PRODUCT IN SPRAY MIXTURES WITH PRODUCTS CONTAINING THE ABOVE INGREDIENTS INCLUDING** formulations with the active ingredient maneb (i.e., Maneb, Mancozeb), Copper Count N-8 and Bordeaux mixture. Manzate 200 and Dithane M-45 wettable powders may be used if sprayed immediately after mixing. **DO NOT ADD LARVIN® BRAND 3.2 THIODICARB INSECTICIDE/OVICIDE TO WATER WITH pH VALUES BELOW 3.0 OR ABOVE 8.5.** If necessary, water should be buffered within this range before adding LARVIN® brand 3.2.

INTEGRATED PEST MANAGEMENT: This product should be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct pest identification, population monitoring and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, profession consultant or other qualified authorities to determine appropriate action thresholds for treating specific pest/crop systems in your area.

DIRECTIONS FOR AERIAL OR GROUND SPRAY APPLICATION

APPLICATION TIMING: Begin application when insect populations reach recognized economic threshold levels. Consult the Cooperative Extension Service, Professional consultants or other qualified authorities to determine appropriate threshold levels for treatment in your area.

APPLICATION INSTRUCTIONS: Apply a minimum finished spray volume of 2 gallons per acre by air or 5 gallons per acre by ground unless otherwise directed under crop specific directions. Under extreme pest populations and dense foliage, use a minimum spray volume of 5 gallons per acre by air and a minimum spray volume of 10 gallons per acre by ground. For best results, it is important to obtain thorough and uniform spray coverage of the plant. Repeat application as needed to maintain control. Use higher dosage rates for heavy infestations, large larvae, or dense foliage. The specific length of residual control depends on environmental factors, plant growth, dosage rate, and degree of insect infestation. Although LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide has some contact activity, larvae not feeding on treated foliage will not be controlled. When banding, determine the amount of chemical to use per acre by dividing the band width by the row width and multiplying by the appropriate broadcast rate.

To clean the sprayer after use, drain and flush with water. Use rinsings on crop according to label instructions or dispose of in an approved manner (See STORAGE AND DISPOSAL).

Do not apply by ground equipment within 25 feet, or by air within 100 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish ponds. Do not cultivate within 10 feet of the aquatic area so as to allow growth of a vegetative filter strip.

DIRECTIONS FOR USE THROUGH SPRINKLER IRRIGATION SYSTEMS

Apply this product only through sprinkler irrigation systems including center pivot and solid set. Do not apply this product through any other type of irrigation system.

SPRAY PREPARATION: Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water.

APPLICATION INSTRUCTIONS: First prepare a suspension of LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide in a mix tank. Fill tank with 1/2 to 3/4 the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of LARVIN® brand 3.2, and then the remaining volume of water. (Suspension concentrations using the appropriate dosage per acre recommended on this label of LARVIN® brand 3.2 per 1 to 4 gallons of water are recommended). Then set sprinkler to deliver 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject the suspension of LARVIN® brand 3.2 into the irrigation water line so as to deliver the desired rate per acre. The suspension of LARVIN® brand 3.2 should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. If you should have any other questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

NOTE: When treatment with LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide has been completed, further field irrigation over the treated area should be avoided for 24 to 48 hours to prevent washing the chemical off the crop.

GENERAL PRECAUTIONS FOR APPLICATIONS THROUGH SPRINKLER IRRIGATION SYSTEMS

Maintain continuous agitation in mix tank during mixing and application to assure a uniform suspension. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute solution per unit time. 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 shutdown. 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. Do not apply when wind speed favors drift beyond the area intended for treatment.

Do not apply when wind speed favors drift, when system connection or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation shall shut the system down and make necessary adjustments should the need arise.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.

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SPRAY DRIFT MANAGEMENT

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator and grower are responsible for considering all these factors when making application decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150-200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See Wind, Temperature and Humidity, and Temperature Inversions sections of this label.

Controlling Droplet Size

- Volume—Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure—Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of Nozzles—Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation—Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type—Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM LENGTH

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

APPLICATION HEIGHT

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

WIND

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present inversions can also be identified by the movement of smoke from 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.

SENSITIVE AREAS

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

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RECOMMENDED USES FOR BROCCOLI, CABBAGE AND CAULIFLOWER

SPRAY VOLUME FOR BROCCOLI, CABBAGE AND CAULIFLOWER: Apply in a minimum finished spray volume of 5 gallons per acre by air or 20 gallons per acre by ground.

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
COLE CROPS (BROCCOLI, CABBAGE, CAULIFLOWER)	Alfalfa Looper	0.4	16.0	Spray as needed. As insect populations increase and/or new plant growth is rapid, the spray interval should be shorter. Use higher dosage rates for heavier infestations or large larvae. Use lower rates for light to moderate infestations.	Do not exceed 4.0 pounds active ingredient (160 fluid ounces of LARVIN® brand 3.2) per acre per season. Do not apply less than 7 days before harvest.
	Beet Armyworm	to	to		
	Cabbage Flea Beetle	0.8	32.0		
	Imported Cabbageworm				
	Cabbage looper	0.6	24.0	NOTE: Regional differences have been noted in the susceptibility of certain strains of diamondback moth to thiodicarb. If local experience indicates inadequate control, use an alternate pesticide.	
	Diamondback moth	to	to		
		1.0	40.0		

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RECOMMENDED USES FOR COTTON

INTEGRATED PEST MANAGEMENT (IPM) USE OF THIS PRODUCT

LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide has both contact and residual ovicidal activity which can be effectively utilized in IPM programs (See ovicide section). LARVIN® brand 3.2 used as an ovicide or a larvicide has been shown to leave substantial populations of beneficial insects and spiders after use. The lower rates allow for maximum beneficial survival and faster rebound of beneficial populations. Larvicidal and ovicidal control coupled with retention of beneficial insects and spiders can offer significant benefits to those producers utilizing integrated pest control programs.

SPRAY VOLUME FOR COTTON: LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide should be applied in a minimum finished spray volume of 2 gallons per acre by aircraft and 5 gallons per acre by ground equipment. Under extreme pest populations or dense foliage, use a minimum spray volume of 5 gallons per acre by air and a minimum spray volume of 10 gallons per acre by ground.

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
COTTON	Ovicide: Cotton bollworm Tobacco budworm	0.125 to 0.25	5.0 to 10.0	<p>Apply on a 3 to 5 day schedule when moth flights begin or sufficient eggs are present.</p> <p>Thorough spray coverage is necessary as eggs must be contacted by LARVIN® brand 3.2 for activity to occur. Eggs laid on untreated foliage or not contacted by LARVIN® brand 3.2 sprays will not be controlled.</p> <p>If significant number of larvae survive, use higher recommended LARVIN® brand 3.2 rates or 0.125 to 0.25 lbs ai/A of LARVIN® brand 3.2 in tank mixture combinations with organophosphates, pyrethroids or <i>Bacillus thuringiensis</i> such as DiPel® ES registered for use on cotton at their label recommended rates.</p> <p>Observe all restrictions and precautions which appear on the labels of all products to be tank mixed with LARVIN® brand 3.2.</p>	<p>Do not apply less than 28 days before harvest.</p> <p>Do not exceed 0.9 pound active ingredient per acre per application or 5.4 pounds active ingredient per acre per season. Do not apply more than 0.9 pound active ingredient per acre of this product in any 7 day period.</p> <p>In Arizona and California, apply before bolls begin to open and do not exceed 1.8 pounds active ingredient per acre per season.</p>
	Larvicide: Cotton bollworm Tobacco budworm	0.6 to 0.9	24.0 to 36.0	<p>In this rate range, LARVIN® brand 3.2 is a direct contact and residual contact ovicide, as well as an effective larvicide. Although LARVIN® brand 3.2 has some contact activity, larvae must feed on treated foliage to be controlled. Use the higher rate when insect larvae populations are heavier or when infestations are predominantly large larvae (>1/4 inch in size).</p>	

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RECOMMENDED USES FOR COTTON (CONTINUED)

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
COTTON (cont)	Larvicide (Cont.): Armyworms (such as: Beet, Fall, etc.) Cabbage looper Cotton leaf perforator Cotton leafworm Soybean looper Fleahopper (Suppression) Pink bollworm (Suppression) Plant bugs (Suppression)	0.6 to 0.9	24.0 to 36.0	As pest pressure increases, reduce intervals between applications and/or increase dosage rate as indicated in specific directions below. A rate of 24 fluid ounces (0.60 lbs. active) should be used when: For low to moderate insect populations and when maximum survival of beneficial insects and spiders is desired. Rates of 30 to 36 fluid ounces (0.75 to 0.90 lbs. active) should be used when: Insect populations are heavy or infestation is predominantly large larvae. Although LARVIN® brand 3.2 has some contact activity, larvae must feed on treated foliage to be controlled. Applications for suppression of Pink bollworm should be timed for the presence of adult moths.	Do not apply less than 28 days before harvest. Do not exceed 0.9 pound active ingredient per acre per application or 5.4 pounds active ingredient per acre per season. Do not apply more than 0.9 pound active ingredient per acre of this product in any 7 day period. In Arizona and California, apply before bolls begin to open and do not exceed 1.8 pounds active ingredient per acre per season.
	Boll weevil (Suppression)	0.6 to 0.9	24.0 to 36.0	Light Boll Weevil Populations: When spraying LARVIN® brand 3.2 on a 5 to 7 day worm control schedule, control of boll weevil will usually be adequate to maintain boll weevil populations below established economic thresholds. Moderate to Heavy Boll Weevil Populations: When spraying LARVIN® brand 3.2 on a worm control schedule, application of a registered boll weevil control product and/or tank mix of LARVIN® brand 3.2 plus a registered boll weevil product should be used. A 3 to 5 day interval between sprays may be required to maintain boll weevil control under heavy infestations.	
	Cutworms	0.6	24.0	See "SPECIAL DIRECTIONS ON "CUTWORMS"	

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RECOMMENDED USES FOR LEAFY VEGETABLES

SPRAY VOLUME FOR LEAFY VEGETABLES: Apply in a minimum finished spray volume of 5 gallons per acre by air or 20 gallons per acre by ground.

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
LEAFY VEGETABLES (Amaranth (Chinese spinach), arugula (roquette), cardoon, celery, Chinese celery, celtuce, chervil, chrysanthemum (edible leaved, garland), corn salad, cress (garden, upland), dandelion, dock (sorrel), endive (escarole), Florence fennel, lettuce (head, leaf), orach, parsley, purslane (garden, winter), radicchio (red, chicory), rhubarb, spinach (leaf, vine, new zealand), Swiss chard)	Alfalfa looper Armyworms (Such as: Beet, Fall, Southern) <i>Heliothis zea</i> (Bollworm, Corn earworm, Tomato fruitworm)	0.4 to 0.75	16.0 to 30.0	Spray as needed. Use the higher dosage rates for heavier infestations of larger larvae. Use the lower rates for light to moderate infestations.	Do not exceed 1.5 pounds active ingredient (60 fluid ounces of LARVIN® brand 3.2) per acre per season. Do not apply less than 14 days before harvest.
	Cabbage looper	0.6 to 0.75	24.0 to 30.0		

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**RECOMMENDED USES FOR SOYBEANS
(STANDARD AND LOW SPRAY VOLUMES)**

STANDARD SPRAY VOLUME FOR SOYBEANS: Apply in a minimum finished spray volume of 2 gallons per acre by air or 5 gallons per acre by ground. Under extreme pest populations or dense foliage, use a minimum spray volume of 5 gallons per acre by air and a minimum of 10 gallons per acre by ground.

LOW SPRAY VOLUME FOR SOYBEANS: Apply in a minimum finished spray volume of 1 gallon per acre by aircraft. Only use the low volume aerial application (i. e., minimum of 1 GPA) where that spray volume will provide adequate coverage of the crop.

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
SOYBEAN (Standard Spray Volume Applications)	Podworms (Bollworm, Corn earworm, Tobacco budworm) Armyworms (Such as: Beet, Fall, Southern, Yellow-striped, etc.) Green cloverworm Velvetbean caterpillar Woollybear caterpillar	0.25 to 0.75	10.0 to 30.0	Use the lower rates for low to moderate populations and maximum protection of beneficials.	Do not feed forage, hay or straw to livestock. Do not apply less than 28 days before harvest. Do not exceed 0.75 pound active ingredient per acre per application or 3.0 pounds active ingredient per acre per season. Do not apply more than 0.75 pound active ingredient per acre of this product in any 7 day period.
	Soybean looper Cabbage looper Mexican bean beetle Bean leaf beetle Stinkbugs (Suppression) Three-cornered alfalfa hopper (Suppression)	0.45 to 0.75	18.0 to 30.0		
	Cutworms	See "SPECIAL DIRECTIONS ON CUTWORMS"			
SOYBEAN (Low Spray Volume Applications)	Podworms (Bollworm, Corn earworm, Tobacco budworm) Green Cloverworm Velvetbean caterpillar Armyworms (such as Fall, Beet, Southern, etc.) Woollybear caterpillar	0.25 to 0.75	10.0 to 30.0	For best results, use the lower rates for low to moderate populations and maximum protection of beneficials. When applying at 1 gallon of spray volume per acre by air, use 1 quart of emulsified crop or vegetable oil (e.g., emulsified corn, soybean or cottonseed oil). Water alone may be used as a diluent for spray volumes of 2 gallons or higher per acre. TANK MIX DIRECTIONS FOR EMULSIFIED CROP OR VEGETABLE OILS: Fill spray tank with approximately 3/4 of the water required for the spray mixture. Add the required amount of LARVIN® brand 3.2 to the spray tank with the agitator running. Then add the desired amount of emulsified crop or vegetable oil. Continue agitation while adding the remainder of water.	FOR USE ONLY IN: Maryland, Virginia, North Carolina, Delaware, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas and Missouri. Do not feed forage, hay, or straw to livestock. Do not apply less than 28 days before harvest. Do not exceed 0.75 pound active ingredient per acre per application or 3.0 pounds active ingredient per acre per season. Do not apply more than 0.75 pound of this product in any 7 day period.

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RECOMMENDED USES FOR SWEET CORN

SPRAY VOLUMES FOR SWEET CORN: Please observe the spray volumes recommended for whorl feeders, silks and ears and foliage feeders under specific directions. For aerial applications, only water may be used as a diluent and total spray volume must be at least 2 gallons per acre.

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
SWEET CORN	Corn earworm European corn borer Armyworms (Such as Fall, Beet, etc.) Western bean cutworm	0.5 to 0.75	20 to 30	<p>Whorl Feeders: Spray as needed. As insect populations increase and/or when new plant growth is rapid, the spray interval should be shorter. For best results, use spray volumes of 15 gallons or more per acre applied by ground equipment using solid or hollow cone nozzles directed into the plant whorl.</p> <p>Insects Attacking Silks And Ears: Apply at 1 to 7 day intervals starting when silks first appear and continuing until harvest, if necessary. As insect populations increase and/or silk growth is rapid, the spray interval should be shorter. Use the higher dosage rate and apply at 1 to 2 day intervals following periods of heavy moth flights. Follow local recommendations for proper timing.</p> <p>Foliage Feeders: Use at least 2 gallons finished spray volume per acre by air or 10 gallons per acre by ground. Spray as needed.</p>	<p>After silk initiation, do not exceed 7.5 pounds of active ingredient (300 fluid ounces of this product) per acre per season.</p> <p>Do not allow livestock to graze treated field.</p> <p>Do not feed treated corn silage (green plant) or fodder to livestock.</p> <p>Ears may be harvested on day of last application.</p>
	Cutworms	See "SPECIAL DIRECTIONS ON "CUTWORMS"			

RECOMMENDED USES FOR CUTWORMS

SPECIAL DIRECTIONS ON CUTWORMS

SPRAY VOLUME FOR CUTWORMS: Apply in a minimum finished spray volume of 3 gallons per acre by air or 15 gallons per acre by ground.

SITE	PEST	DOSAGE PER ACRE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces		
COTTON, SOYBEANS, SWEET CORN	Cutworms	0.5 to 0.75	20.0 to 30.0	<p>Postemergence Rescue Treat-ments: For best results, apply as a broadcast spray when cutworms are actively feeding. If cutworms are feeding below the ground, control will be more difficult. Light cultivation with a rotary hoe before spraying may enhance control. If banding, use a minimum width of 10 inches over the row. When banding, determine the amount of chemical to use per acre, by dividing the band width by the row width and multiplying by the appropriate broadcast rate.</p>	Refer to each specific crop for use restrictions.

RECOMMENDED USES FOR ORNAMENTALS AND TREES

For dilute-spray ground applications to ornamentals (such as: Trees, Shrubs, Herbaceous bedding plants, Herbaceous greenhouse plants and non-bearing fruits):

Apply the specified dosage per 100 gallons of water. For concentrate-spray ground applications, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. For aerial application to ornamental plants, shrubs and trees (except forests), apply the specified dosage per acre in a minimum total spray volume of 5 gallons to provide thorough coverage.

BEFORE MAKING TREATMENTS REFER TO "PLANT TOLERANCE INFORMATION" LISTED ON THIS LABEL.

SITE	PEST	DOSAGE OF LARVIN® BRAND 3.2 THIODICARB INSECTICIDE/OVICIDE		SPECIFIC DIRECTIONS	USE RESTRICTIONS
		FLUID OUNCES PER 100 GALS SPRAY OR PER ACRE	PINTS PER 100 GALS SPRAY OR PER ACRE		
ORNAMENTALS such as: Trees (except forests), Shrubs, Herbaceous bedding plants, Herbaceous greenhouse plants, Non-bearing fruit trees (Citrus: Grapefruit, lemons, limes, oranges, tangelos, tangerines, citrus citron, kumquats and hybrids; Nut Crops: almonds, filberts, pecans, walnuts; Pome Fruits: apples, pears, loquats, crabapples, oriental pears, quince; Stone Fruits: peaches, apricots, nectarines, plums, prunes and cherries)	Armyworms Bagworm Cankerworms (such as: spring, fall) Gypsy moth Leafrollers (such as: omnivorous, fruit tree) Spruce budworms Webworms (such as: fall, mimosa) Tent caterpillars	20 to 30	1.25 to 1.9	See "Plant Tolerance Information" and "Appli- cation" sections of this label. Apply when pests appear and thereafter as needed not to exceed 6 applications per site per season.	Do not use on fruit trees or vines that will bear edible fruit within one year.

RECOMMENDED USES FOR NON-CROP AREAS

SITE	PEST	DOSAGE PER ACRE			SPECIFIC DIRECTIONS	USE RESTRICTIONS
		Pounds Active	Fluid Ounces	Pints		
NON-CROP AREAS (Wastelands, Roadsides, Rights-of-Way, Grassways, Shelter belts, and Fencerows)	Armyworms	0.40	16.0	1.0	Treat non-crop areas where pests congregate to reduce infestation levels or to prevent movement into crop-lands. Apply when pests appear and every two weeks thereafter as needed, not to exceed 6 applications per site per season.	Do not allow livestock to graze treated areas. Do not use treated plants as food or feed.
	Bagworm	to	to	to		
	Budworms	0.76	30.0	1.9		
	Cankerworms (such as: spring, fall)					
	Cutworms					
	Gypsy moth					
	Heliothis spp. (such as: corn earworm)					
	Leafrollers (such as: omnivorous, fruit tree)					
	Loopers					
	Oakworms					
	Sawflies					
	Skippers					
	Tent caterpillars					
	Webworms (such as: fall, mimosa)					

ORNAMENTAL PLANT TOLERANCE INFORMATION

LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide has been tested on many species of ornamental plants. Results indicate plants listed below are tolerant to the higher rates of this product. Horticultural varieties of many plants differ significantly in sensitivity to pesticides. Before making applications to plants not listed, it is recommended that a small portion of the crop be treated to determine its tolerance to this product. Plants stressed from heat, moisture or other factors are usually more sensitive to sprays. Phytotoxic reactions can be minimized by spraying when stress is minimal such as early mornings or late evenings.

ORNAMENTAL PLANTS TOLERANT TO THIODICARB INSECTICIDE

TREES	SHRUBS	HERBACEOUS GREENHOUSE PLANTS		HERBACEOUS BEDDING PLANTS
Apple, (Crab)	Arborvitae	<i>Acalypha hispida</i>	Ixora	Calendula
Birch, (Weeping, White)	Aucuba	<i>Acalypha wilkesiana</i>	Jade Plant	Canna
Azalea	Boxwood	<i>Aechmea lueddemanniana</i>	<i>Kalanchoe daigremontiana</i>	Chrysanthemum
Honeylocust, (Sunburst)	Camellia	<i>Alternanthera versicolor</i>	<i>Maranta leuconeura erythroneura</i>	Coleus
Maple, (Sugar)	Elaeagnus	Aluminum Plant	<i>Nephrolepis exaltata</i>	Geranium
Pine, (Scotch)	Euonymus	<i>Begonia semperflorens</i>	<i>Peperomia magnoliifolia</i>	Hosta
Spruce, (Norway)	Fatsia, (Japanese)	Cactus	<i>Peperomia obtusifolia</i>	Impatiens
	Gardenia	<i>Ceropegia woodii</i>	<i>Philodendron oxycardium</i>	Lantana
	Hawthorn	<i>Chamaedorea elegans</i>	Piggyback Plant	Periwinkle
	Holly, (Japanese)	<i>Chlorophytum comosum</i>	<i>Pilea grandis</i>	Petunia
	Holly, (Yaupon)	Dieffenbachia	Poinsettia	Salvia
	Juniper	<i>Dracaena sanderana</i>	Pseuderanthemum	Snapdragon
	Lantana	Echeveria	<i>Rhoeo spathacea</i>	Verbena
	Ligustrum	Fern	<i>Sansevieria trifasciata</i>	Violet
	Lilac	<i>Ficus diversifolia</i>	<i>Scindapsus aureus</i>	
	Mahonia	Gloxinia	Senecio	
	Osmanthus	<i>Gynura sarmentosa</i>	<i>Spathiphyllum wallisii</i>	
	Pittosporum	<i>Hechtia tellandsioides</i>	<i>Syngonium podophyllum</i>	
	Pyracantha	Hoya	Torenia	
	Rhododendron	<i>Iboza riparia</i>	<i>Zebrina pendula</i>	
	Rose, (Hybrid Tea)	Ivy, (Swedish)	<i>Zygocactus truncata</i>	
	Yew			

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FIELD USE CONVERSION TABLE

DOSAGE PER ACRE	ACRES TREATED PER VOLUME			
	OF LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide			
Pounds Active	Fluid Ounces	1 gallon	2.5 gallons	5 gallons
0.125	5.0	25.6	64.0	128.0
0.25	10.0	12.8	32.0	64.0
0.33	13.2	9.7	24.2	48.5
0.40	16.0	8.0	20.0	40.0
0.45	18.0	7.1	17.7	35.5
0.50	20.0	6.4	16.0	32.0
0.55	22.0	5.9	14.5	29.0
0.60	24.0	5.3	13.2	26.5
0.65	26.0	4.9	12.3	24.6
0.70	28.0	4.6	11.4	22.8
0.75	30.0	4.2	10.5	21.4
0.80	32.0	4.0	10.0	20.0
0.90	36.0	3.6	8.9	17.8

1 U.S. Gallon Equals 128 Fluid Ounces

IMPORTANT: READ BEFORE USE

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

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LARVIN® brand 3.2 Thiodicarb Insecticide/Ovicide Aqueous Flowable (PENDING) Submitted 5/8/01.