Reg no: 464-448 PM-12 1 of 14

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 2 1989

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BEST AVAILABLE COPY

[illegible]

Dear Mr. [illegible]:

Subject: [illegible]

[illegible]

50391:I:Edwards:LE-2:KENCO.7/19/89:7/28/89:dg:vo:do:ek:dg

	CONCURRENCES							
SYMBOL								
SURNAME								
DATE								

Form 1320-1 (12-70) OFFICIAL FILE COPY

If these conditions 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 stamped copy of the labeling is enclosed for your records.

Sincerely yours,

Dennis H. Edwards, Jr.
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Enclosure

3 & 14

ACCEPTED
with COMMENTS
In EPA Letter Dated

No. 2 [illegible]

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 464-448

Specimen Label

Lorsban* 4E

Insecticide

For Control of Various Insects Infesting Certain Field, Fruit, Nut, and Vegetable Crops

Active Ingredient(s):	
Chlorpyrifos [O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate]	40.7%
Inert Ingredients	59.3%

Contains 4 pounds of chlorpyrifos per gallon
E.P.A. Registration No. 464-448
E.P.A. Est. 464-MI-1

KEEP OUT OF REACH OF CHILDREN

WARNING
AVISO:

PRECAUCION AL USUARIO:

Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

MAY BE FATAL IF SWALLOWED • HARMFUL IF ABSORBED THROUGH SKIN • CAUSES SUBSTANTIAL BUT TEMPORARY EYE INJURY • CAUSES SKIN IRRITATION

Avoid Breathing Vapor Or Spray Mist • Do Not Get In Eyes, On Skin, Or On Clothing • Wear Protective Clothing, Rubber Gloves, And Goggles • Wash Thoroughly With Soap And Water After Handling And Before Eating Or Smoking • Immediately Remove Contaminated Clothing And Wash Before Reuse • Destroy Contaminated Shoes • Do Not Apply This Product In Such A Manner As To Directly Or Through Drift Expose Workers Or Other Persons • The Area Being Treated Must Be Vacated By Unprotected Persons • Keep Away From Food, Feedstuffs And Water Supplies

STATEMENTS OF PRACTICAL TREATMENT

If Swallowed: Do not induce vomiting. Contains aromatic petroleum solvent. Call a physician or poison control center immediately. **If In Eyes:** Flush with plenty of water for at least 15 minutes. Get medical attention. **If On Skin:** Wash with plenty of soap and water. Get medical attention if irritation persists. **If Inhaled:** Remove to fresh air if effects occur. Get medical attention.

NOTE TO PHYSICIANS: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early, however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration.

Physical or Chemical Hazards

COMBUSTIBLE • Do Not Use or Store Near Heat or Open Flame. • Do Not Cut or Weld Container.

Environmental Hazards

This pesticide is toxic to birds and wildlife, and extremely toxic to fish and aquatic organisms. Do not apply directly to water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. Do not contaminate water by cleaning of equipment or disposal of waste. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Avoid use when bees are actively foraging. Protective information may be obtained from your Cooperative Agricultural Extension Service.

NOTICE

Read and understand the entire label before using. Use only according to label directions.

Before buying or using this product, read "WARRANTY LIMITATIONS AND DISCLAIMER" elsewhere on this label. If terms are not acceptable, return **unopened** package at once to seller for full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under WARRANTY LIMITATIONS AND DISCLAIMER.

Lorsban* 4E

IN CASE OF AN EMERGENCY

endangering life or property involving this product, call collect 517-636-4400

AGRICULTURAL CHEMICAL

Do Not Ship or Store with Food, Feeds, Drugs, or Clothing

REENTRY STATEMENT

Do not allow reentry into treated areas within 24 hours unless protective clothing is worn. Protective clothing consists of at least a hat or other suitable head covering, a long-sleeved shirt and long legged trousers or a coverall type garment (all of closely woven fabric covering the body including the arms and legs), shoes and socks. Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. These oral warnings shall inform workers of areas or fields that may not be entered without protective clothing and actions to take in case of accidental exposure as shown by the Statement of Practical Treatment section on this label. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Written warnings must include the following information: WARNING: Area treated with LORSBAN 4E insecticide on (insert date of application). Do not enter without protective clothing for 24 hours. In case of accidental exposure (insert actions to take as shown by the Statement of Practical Treatment section on this label).

Do not use on turf or for structural pest control. Do not formulate this product into other end use products.

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DIRECTIONS FOR USE

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

General Information

LORSBAN 4E insecticide forms an emulsion when diluted with water and is suitable for use in all conventional spray equipment.

Mixing Instructions

To prepare the spray, add a portion of the required amount of water to the spray tank and with agitation add the LORSBAN 4E. Complete filling the tank with the balance of water needed. Maintain sufficient agitation during both mixing and application to ensure uniformity of the spray mixture.

LORSBAN 4E insecticide may also be used in tank mixtures with certain herbicides and or with non-pressure fertilizer solutions as recommended under specific crop use directions. Note that LORSBAN 4E may be inactivated by sulfur containing fertilizer solutions. Prepare tank mixtures in the same manner as recommended above for use of LORSBAN 4E alone. When tank mixtures of LORSBAN 4E and herbicides are involved, add wettable powders first, flowables second, and emulsifiable concentrates last. Where a fertilizer solution is involved, it is strongly recommended that a fertilizer pesticide compatibility agent such as Unite or Compex be used. Maintain constant agitation during both mixing and application to ensure uniformity of the spray mixture. Do not allow spray mixtures to stand overnight.

NOTE: Test compatibility of the intended tank mixture before adding LORSBAN 4E to the spray or mix tank. Add proportionate amounts of each ingredient to a pint or quart jar, cap, shake, and let set 15 minutes. Formation of precipitates that do not readily redisperse indicates an incompatible mixture that should not be used.

Sprinkler Irrigation

LORSBAN 4E may be applied by sprinkler irrigation for the following crop uses:

> Alfalfa, Citrus Orchard Floors, Field Corn, Popcorn, Sweet Corn, Cotton, Cranberries, Sorghum, and Soybeans

See the use sections for the individual crops for further application information. Do not apply this product to the above listed crops through any other type of irrigation system. Do not apply this product by chemigation to any other crop.

The following use directions are to be followed when LORSBAN 4E is applied through sprinkler irrigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injector with soap and water. Determine the amount of insecticide needed to cover the desired acreage. Pump the required LORSBAN 4E insecticide into a steel tank, start mechanical or hydraulic agitation, and add in order the non-emulsifiable oil and/or water. Continually agitate the mixture containing LORSBAN 4E. Set the sprinkler system to deliver the desired inches of water per acre. Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector. Start the injector and calibrate the injector system according to section 14 (below). The mixture containing LORSBAN 4E must be injected continuously and uniformly into the irrigation water line as the sprinkler is moving. This procedure is necessary to deliver the desired

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rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

The following use precautions will result in a safe and successful application of mixtures containing LORSBAN 4E:

1. Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, micro sprinkler or hand move. Do not apply this product through any other type of irrigation system.

2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

5. 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.

6. 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. Refer to the American Society of Agricultural Engineers Engineering Practice 409 for more information.

7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

8. 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.

9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

10. 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.

11. 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. The metering pump must provide a greater pressure than that of the irrigation system at the point of injection. The pump must meet Section 675 for "Electrically Driven or Controlled Irrigation Machines" NEC 70 and must contain Viton or Teflon seals.

12. To insure uniform mixing of the insecticide into the water line, inject the mixture through a nozzle placed in the fertilizer injection port or just ahead of an elbow or tee in the irrigation line so that the turbulence created at those points will assist in mixing. It is suggested that the injection point be higher than the insecticide tank to prevent siphoning.

13. The steel tank holding the insecticide mixture should be large enough to allow the system to complete a revolution with one filling. It should be free of rust, fertilizer, sediment, and foreign material and equipped with an in-line strainer situated between the tank and the injector pump.

14. In order to calibrate the irrigation system and injector to apply the mixture containing LORSBAN 4E, determine the following: 1) Calculate the number of acres irrigated by the system. 2) Set the irrigation rate and determine the number of minutes for the system to cover the intended treatment area. 3) Calculate the total gallons of insecticide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes to cover the treatment area. This value equals the gallons per minute output that the injector must deliver. Convert the gallons per minute to milliliters or ounces per minute. Calibrate the injector pump with the system in operation at the desired irrigation rate. It is suggested that the injector pump be calibrated at least twice before operation, and the system should be monitored during operation.

15. Do not apply when wind speed favors drift beyond the area intended for treatment. End guns must be turned off during the application, if they irrigate nontarget areas.

16. Do not allow irrigation water to collect or runoff and pose a hazard to livestock, wells, or adjoining crops.

17. Allow foliage to dry before reentering the field.

18. Do not apply through sprinkler systems which deliver a low coefficient of uniformity such as center pivot units.

Use and Dosage Recommendations

ALFALFA: Use LORSBAN 4E to control the following pests at the dosages indicated by application as a broadcast ground spray.

Aphids (suppression)	½ pint per acre
Corn rootworm adults (spotted cucumber beetle) grasshoppers	½ to 1 pint per acre
Alfalfa blotch leafminer, alfalfa looper, alfalfa weevil larvae and adults, armyworms, cutworms, Egyptian alfalfa weevil larvae and adults, plant bugs, leafhoppers spittlebugs	1 to 2 pints per acre

Note: Use higher rates to control spotted alfalfa aphid in California and Nevada. Stubble spray may be applied to control leafhopper in the Northeast.

Mix the required dosage with enough water to ensure thorough coverage of crop foliage and apply using aerial (fixed-wing or helicopter) or power-operated ground spray equipment. For aerial application use 2 to 5 gallons of water per acre. For best coverage when using ground application, a minimum of 20 gallons of water per acre with hollow cone nozzles is recommended. Control may be reduced at low spray volumes under high temperature and wind conditions. Treat when field counts or crop injury indicates that damaging pest populations are developing or present; however, do not apply more than once per crop cutting. Some reduction in insect control may be evident under excessively cool conditions. For Egyptian alfalfa weevil control in California, apply the specified dosage in a minimum of 5 gallons of water per acre when larvae are actively feeding and populations reach 15 to 20 larvae per 180 degree sweep with a 15-inch diameter net.

LORSBAN 4E may also be applied through sprinkler irrigation systems as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of LORSBAN 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See the Sprinkler Irrigation section of this label for further information.

LORSBAN 4E insecticide should not be tank-mixed with pesticides, surfactants, or fertilizer formulations unless prior use has shown the combination noninjurious under your current conditions of use. Some phytotoxic symptoms may be observed on young, tender rapidly growing alfalfa when treated with LORSBAN 4E. Alfalfa will outgrow the symptoms and no yield loss should be expected.

This product is highly toxic to bees exposed to direct treatment on alfalfa. Do not apply if nearby bees are clustered outside of hives and bees are foraging. Protective information may be obtained from your Agricultural Extension Service.

Restrictions: *Do not cut or graze treated alfalfa within 7 days after application of ½ pint of LORSBAN 4E per acre within 14 days after application of 1 pint per acre or within 21 days after application of rates above 1 pint per acre. Do not make more than 4 applications per year or apply more than once per crop cutting.*

ASPARAGUS: Use LORSBAN 4E to control cutworms, asparagus aphids, and asparagus beetles by application at the rate of 2 pints per acre. Mix the specified dosage in sufficient water to ensure thorough coverage of treated plants and apply as a broadcast, foliar spray. For cutworms, it is preferable to apply LORSBAN 4E when the soil is moist and worms are active on or near the soil surface. Applications may be made during the fern stage for control of asparagus beetles and asparagus aphids when field counts or crop injury indicates that damaging pest populations are developing or present.

Restrictions: *Do not make more than one preharvest application per season or apply within one day of harvest. Do not make more than two postharvest applications during the fern stage. Based on available residue data, the use of LORSBAN 4E on asparagus is limited to the Midwest and Pacific Northwest.*

CHERRIES: Use LORSBAN 4E for the control of lesser peachtree borer, greater peachtree borer, and American plum borer by application as a trunk spray. Mix 1½ to 3 quarts of LORSBAN 4E with 100 gallons of water and apply as a coarse, low-pressure spray to give uniform coverage of tree trunks and lower limbs. Make a second application two weeks after the first one and a third application after harvest. Avoid contact with foliage in sweet cherries as premature leaf drop may result. Consult your State Agricultural Experiment Station or Extension Service Specialist for proper time to treat in your area.

In addition, one of the three allowable applications per year may be applied as a dormant spray for control of San Jose scale, peach twig borer, and climbing cutworms. For control of these pests tank mix ½ to 1 pint of LORSBAN 4E with 1 to 2 gallons of a petroleum oil recommended for dormant use in 100 gallons of water and spray the entire tree by application to runoff using ground spray equipment. For low volume (concentrate) sprays (40 to 100 gallons of spray mixture per acre) use the same amounts of LORSBAN 4E and spray oil per acre required for application as a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use the higher dosage of LORSBAN 4E for severe infestations. Use oil as recommended by your State Agricultural Experiment Station or Extension Service Specialist.

Restrictions: *Make only three applications per year. Do not apply within 6 days before harvest. Do not allow meat or dairy animals to graze in treated orchards.*

CITRUS FRUITS: Use LORSBAN 4E insecticide at the rates indicated to control the following pests. Use the lower rates for light infestations and increase the dosage for heavier infestations.

CROP	PEST	Dosage LORSBAN 4E for Spray Coverage		Gallons of Spray Per Acre For Dilute Applications[3]	Remarks
		Dilute (Pints/ 100 gal. water)	Dilute or Concentrate (Pints/ Acre)		
Grapefruit, Lemons, Oranges, and Other Citrus Fruits	Aphids, Katydids, Lepidopterous larvae: Cutworms, Fruittree leafroller, Orange tortrix, Western tussock moth	Outside Coverage Spray (OC) ½ to 1	2 to 7	200 to 700	Use directions apply in all states including California
	Citrus thrips, Mealy bugs, Scale insects: Black scale, Brown soft scale, California red scale, Snow scale, Chaff scale	½ to 1	2 to 7	200 to 700	Use directions apply in all states except California (See footnotes 1 & 2)
	Citrus rust mite		4 to 7	100 to 700	Use directions apply in Florida only

[1] In California apply as Outside Coverage (OC) using 6 to 12 pints of LORSBAN 4E per acre in 100 to 300 gallons of finished spray per acre.

[2] In California apply as Thorough Coverage (TC) using 8 to 12 pints of LORSBAN 4E per acre. For dilute sprays apply 1200 to 2400 gallons of spray per acre but do not apply more than 12 pints of LORSBAN 4E per acre or use less than ½ pint of LORSBAN 4E per 100 gallons of finished spray per acre.

[3] Gallonage per acre based on average size of mature trees. Adjust to tree size per acre.

For dilute applications, use the specified dosage per 100 gallons of water for the spray type indicated for pest to be controlled. For **concentrate sprays**, use the same amount of LORSBAN 4E per acre that would be needed for application as a dilute spray, using appropriate application coverage procedures. A petroleum spray oil recommended for use on citrus may be added to **dilute spray mixtures only** at a rate of up to 1.8 gallons per 100 gallons of water to improve control of aphids, mealybugs, scale insects, and thrips. Treat when insects become a problem or in accordance with the local spray schedule recommended by your State Extension Service Specialist. Do not apply when temperature exceeds 95°F. LORSBAN 4E is highly toxic to bees exposed to direct treatment and should not be applied when bees are actively visiting the area. Apply late in evening or early morning to groves where honey bees are expected to visit.

Precautions: Observe local use directions for tank mix combinations especially in regard to applications of LORSBAN 4E plus spray oil. Consult with a County Farm Advisor, County Agent, Extension Service personnel, or Agricultural Commissioner for such information regarding a given locality. In California LORSBAN 4E should not be used in combination with spray oil when temperatures are expected to exceed 95°F the day of application or for several consecutive days thereafter. Do not apply when trees are stressed by drought or high temperature. LORSBAN 4E should not be tank mixed with D... ...ts as crop injury may occur.

***Restrictions:** Do not apply more than 2 applications per fruit year or more than 15 pints of LORSBAN 4E insecticide per acre per fruit year. Do not make second application within 30 days of the first application. Do not treat within 21 days before harvest for applications up to 7 pints of LORSBAN 4E per acre nor within 35 days for application of rates above 7 pints per acre. Do not pick fruit or do other work involving contact with trees within 2 days after treatment. Do not allow livestock to graze in treated areas.*

CITRUS ORCHARD FLOORS: Use LORSBAN 4E to control red imported fire ants and other ant species by applying the specified dose in 25 or more gallons of water with ground application equipment that will uniformly apply the spray to the orchard floor. To control foraging ants and suppress mounds, apply LORSBAN 4E to the orchard floor at the rate of ¾ to 1 quart per acre. Retreat as needed. For best insect control, uniform coverage of the orchard floor is necessary. Do not apply where weed growth or other obstructions would impede uniform coverage of the orchard floor. Do not apply in tank mixtures with Roundup or paraquat herbicides. Foliar applications of LORSBAN 4E may be made in addition to the orchard floor treatments.

LORSBAN 4E may also be applied to citrus orchard floors through sprinkler irrigation systems only if the system uniformly covers the soil surface at the base of the tree. For best results, use the recommended amount of LORSBAN 4E per acre. See the Sprinkler Irrigation section of this label for further information.

***RESTRICTIONS:** Do not apply more than 10 quarts of LORSBAN 4E per acre per season. Do not apply last treatment within 28 days before harvest. Do not allow livestock to graze in treated areas. In Florida, do not make more than 3 applications per season.*

CRANBERRIES: Use LORSBAN 4E by application as a broadcast, foliar spray to control brown spanworm, cranberry fruitworm, cranberry weevil, cutworms, fireworms, and Sparganothis fruitworms at the rate of 3 pints per acre. Mix the specified dosage in enough water to ensure thorough coverage and apply no less than 5 gallons of spray per acre when using aerial equipment or no less than 100 gallons of spray per acre when using ground equipment. For weevil control, apply once at flower bud development (late May early June) and, if weevils are present, once after 100% bloom (early to mid July). For other insects, treat when field counts indicate damaging insect populations are developing or present. Apply only after the winter flood has been removed. To avoid pesticide contamination of flood waters, make no applications while bogs are flooded.

LORSBAN 4E may also be applied through sprinkler irrigation systems to control the above listed pests. For best results, use the recommended rate of LORSBAN 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See the Sprinkler Irrigation section of this label for further information.

***Restrictions:** Do not make more than two applications per year or apply within 60 days before harvest.*

FIELD CORN, POPCORN, SWEET CORN: For use to control cutworms, armyworms, corn earworm, corn rootworm adults, chinch bugs, grasshoppers, wireworms, flea beetle larvae and adults, aphids, billbugs, grubs, western bean cutworm, corn borers, symphylans, common stalk borer, and lesser cornstalk borer.

Preplant Incorporation Treatment: Use LORSBAN 4E at the following rates by application in sufficient water to the soil surface and incorporate into the soil.

Cutworms, symphylans	2 to 4 pints per acre
Wireworms, billbugs, flea beetle larvae, grubs, seed corn maggots, seed corn beetle	4 pints per acre
Lesser cornstalk borer, corn rootworm larvae	6 pints per acre

NOTE. For suppression of nematodes in North Carolina, South Carolina, and Virginia, apply 4 to 6 pints of LORSBAN 4E per acre.

Use recommended rate in not less than 10 gallons of water per acre and apply as a broadcast spray to the soil surface using suitable power-operated ground spray equipment. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil using a disc, field cultivator or equivalent equipment.

LORSBAN 4E insecticide may also be applied in tank mixtures with non-pressure fertilizer solutions and or with Bladex, Eradicane, Sutan, Lasso, Dual, and atrazine herbicides. See the Mixing Instructions section of this label for further information. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for the other products used in combination with LORSBAN 4E.

Preplant, At-Plant or Preemergence Treatment in Conservation Tillage: Use LORSBAN 4E at the following rates by application in sufficient water to surface trash and exposed soil.

Cutworms, armyworms	1 to 2 pints per acre

Use recommended rate in not less than 20 gallons of water per acre and apply as a broadcast spray using suitable power-operated ground spray equipment. Use higher rates for residual control.

LORSBAN 4E may also be applied in tank mixtures with non-pressure fertilizer solutions and or with paraquat and Roundup. See the Mixing Instructions section of this label for further information. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for the other products used in combination with LORSBAN 4E.

Cultivation Time Treatment: Use LORSBAN 4E at the rate of 2 pints per acre to control corn rootworm larvae. Apply LORSBAN 4E as a water emulsion on both sides of the row at the base of the plants just ahead of the cultivator shovels. Cover the insecticide with soil around the brace roots. The best time to apply a basal treatment of a soil insecticide with cultivation is near the beginning of egg hatch. A cultivation application of LORSBAN 4E may be made in addition to an at planting application of LORSBAN 15G granular insecticide.

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Postemergence Treatment: Use LORSBAN 4E at the following rate by application in sufficient water to ensure thorough coverage of treated plants.

Grasshoppers ½ to 1 pint per acre

Armyworms, chinch bugs, aphids, corn rootworm adults, webworms, western bean cutworm, European corn borer (see note) 1 to 2 pints per acre

Southwestern corn borer, corn earworm 1½ to 2 pints per acre

Cutworms, bollbugs, lesser cornstalk borer, flea beetle adults, common stalk borer 2 to 3 pints per acre

Note: The recommended dosage will control silk clipping by corn rootworm adults. For European corn borer control, use 1½ to 2 pints per acre when application is made with power-operated ground and aerial equipment and 1 to 2 pints per acre when application is made through a sprinkler irrigation system.

Treat when field counts indicate that pests are or may become a problem. For best bollbug, chinch bug, and flea beetle control, apply with sufficient water to ensure a minimum spray volume of 20 to 40 gallons per acre and 40 psi using **ground spray equipment.** On corn less than 6 inches tall, apply the insecticide spray in a 9 to 12 inch wide band over the row. On corn greater than 6 inches tall, apply the insecticide spray using drop nozzles directed to the base of the plant. Do not reduce the dosage for banded or directed applications. Concentrate the labeled dosage rate in the treated zone. When chinch bugs continue to immigrate to corn over a prolonged period or under extreme pressure, a second application of LORSBAN 4E may be needed.

For cutworm, webworm, western bean cutworm, armyworm, aphid, European and southwestern corn borer, grasshopper, lesser cornstalk borer, corn rootworm adult, corn earworm, and common stalk borer control, apply as a broadcast spray using either aerial (fixed-wing or helicopter) or power-operated ground spray equipment. For aerial application, use 2 to 5 gallons of spray per acre. Control may be reduced at low spray volumes under high temperature and wind conditions. For cutworms, it is preferable to apply LORSBAN 4E when soil is moist and worms are active on or near the soil surface. If ground is dry, cloddy or crusty at time of treatment, worms may be protected from the spray and effectiveness will be reduced. If such conditions exist, shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment may improve control. Consult your Agricultural Experiment Station or Extension Service specialist for additional information concerning control practices in your area. For webworm control, shallow incorporation using a rotary hoe or other suitable equipment immediately before or soon after treatment is necessary. For first-generation European corn borer control, treat when 25 to 50 percent of the corn plants show pinhole feeding or leaf-feeding scars. Ground applications should be directed into the corn whorls. For second-generation European corn borer control, treat when field counts of egg masses indicate pests are or may become a problem. For southwestern corn borer control, treat when field counts of egg masses indicate pests are or may become a problem. A second application may be applied 10 to 14 days later, if needed due to reinfestation. For common stalk borer control, treat approximately 11 days after application of Roundup herbicide or after complete burndown with paraquat herbicide (3 to 5 days). Do not use LORSBAN 4E in combination with the burndown herbicide for control of common stalk borer.

LORSBAN 4E insecticide may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar insects. For best results, use the recommended rate of LORSBAN 4E in a tank mix with 2 pints per acre of non-emulsifiable oil. Maintain vigorous tank agitation to assure uniformity of the LORSBAN 4E plus oil mixture throughout the injection period. LORSBAN 4E may also be applied through sprinkler irrigation systems at the rate of 2 to 3 pints per acre to control corn rootworm larvae. Time application to coincide with the appearance of the second instar larvae. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. Apply with enough water to wet the root zone to the depth control is needed. Under saturated soil conditions, allow enough soil drying to occur so that an application using a minimum water rate will not produce runoff. Consult University Extension personnel or other experienced consultants to determine the need to treat and to aid in application timing. See the Sprinkler Irrigation section of this label for further information.

Restrictions: *Do not apply within 35 days before harvest of grain. Do not apply more than a total of 15 pints of LORSBAN 4E per acre per season. Do not allow livestock to graze in treated areas nor harvest treated corn silage as feed for meat or dairy animals within 14 days after last treatment. Do not feed treated corn fodder to meat or dairy animals within 35 days after last treatment.*

SWEET CORN Grown Only in Florida and Georgia: Use LORSBAN 4E to control infestations of beet armyworm, fall armyworm and corn earworm by application as a broadcast foliar spray at the rate of 1 to 2 pints per acre. Mix the specified dosage in enough water to ensure thorough coverage and apply using suitable aerial or ground spray equipment. For aerial application, use at least 2 gallons of spray per acre. Treat when field counts indicate damaging pest populations are developing or present. Re-treat as necessary to maintain control but do not apply more than twenty-two 1-pint or eleven 2-pint treatments per season.

LORSBAN 4E insecticide may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar insects. For best results, use the recommended rate of LORSBAN 4E in a tank mix with 2 pints per acre of non-emulsifiable oil. Maintain vigorous tank agitation to assure uniformity of the LORSBAN 4E plus oil mixture throughout the injection period. See the Sprinkler Irrigation section of this label for further information.

Restrictions: *Do not apply more than 22 pints of LORSBAN 4E per acre per season. Do not harvest corn ears, allow livestock to graze in treated areas, nor feed treated silage, fodder or grain to meat or dairy animals within 21 days after treatment. Do not use in conjunction with postplant broadcast foliar applications of LORSBAN 15G granular insecticide.*

COTTON: Use LORSBAN 4E for control of the following pests in all states except Arizona and California at the dosages indicated.

Cotton fleahopper, plant bugs (*Lygus, Mirids*) ⅜ to 1 pint per acre

Cotton aphid, fall armyworm, grasshoppers, thrips, yellow-striped armyworm ½ to 1 pint per acre

Spider mites 1 pint per acre

Beet armyworm, bollworms (*Heliothis spp.*), boll weevil, cutworms, pink bollworm, salt marsh caterpillar 1½ to 2 pints per acre

NOTE: The recommended dosage rate of ⅜ pint per acre will not achieve the high degree of control of the higher label rate, but will minimize the damage done by plant bugs and cotton fleahopper and allow the beneficial insects to survive, build up, and be available to aid in the control of bollworms infesting cotton.

Use LORSBAN 4E for control of the following pests in Arizona and California at the dosages indicated

Armyworms, cotton aphid, cotton leafperforator, cotton fleahopper, cotton thrips, saltmarsh caterpillar, thrips — 1 to 2 pints per acre

Bollworms (*Heliothis spp.*), boll weevil, cutworms, pink bollworm — 2 pints per acre

NOTE: The 2 pint rate will aid in the suppression of cotton leafperforator and spider mites

Mix the required dosage with sufficient water to ensure thorough coverage of plants and apply using aerial or power-operated ground spray equipment. For aerial application use at least 1 gallon of spray per acre. Treat when field counts indicate damaging insect populations are developing or present. Re-treat as necessary to maintain control.

LORSBAN 4E insecticide may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of LORSBAN 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See the Sprinkler Irrigation section of this label for further information.

For effective control of spider mites when large numbers of eggs are present, apply a second spray 3 to 5 days after initial treatment to control newly hatched nymphs.

For best results on bollworms, it is suggested that fields be scouted twice per week and treatments made when worms are 1¼ inch or less in length. The following table illustrates the size of worms in relation to age and stage of development (instar) as a guide to timing of treatments for best control.

From the table it can be seen that a scouting schedule of only once per week will not be satisfactory since the worms may be too big to control effectively by the seventh or eighth day.

Timing for the best worm control

	Age (days)	Size	Instar
Get the worms at this stage	Hatch	1/16"	Hatch
	3	3/32"	I
	5	9/32"	II
	6	7/16"	III
	8	11/16"	IV

Proper application techniques help to ensure thorough spray coverage and correct dosage and are thus important in obtaining good control of pests. Consider these suggestions when applying LORSBAN 4E insecticide on cotton.

Aerial Application: Shorten boom length to avoid spray entering the vortices at the wing tips. Swath width should be reduced when wind direction is the same as direction of spraying.

The proper nozzle arrangement and swath width to avoid skips and vortices effect can be checked out by flying over a paper tape (adding machine paper) using water with or without soluble dye. (The dye gives a permanent record.)

Flying at a height of 5-15 feet above the target results in the best coverage.

Nozzle orientation of the boom is important. More break-up occurs when nozzles are pointed straight down versus the straight back position. Desired droplet size (100-200 microns) can be obtained by angling the nozzles somewhere in this range.

Marking of swath by flagging or permanent markers is essential.

Ground Application: Orient the boom and nozzles so that uniform coverage is obtained. The swath width should not be wider than the boom; drift spray is wasted spray so do not depend on it. Use flat fan or disc-core hollow cone nozzles with maximum spacing of 20 inches and a spray pressure of 40-60 psi with a droplet size of 100-200 microns.

Restrictions: *Do not apply within 14 days before harvest. Do not allow livestock to graze in treated areas. Do not feed gin trash or treated forage to livestock.*

LORSBAN 4E insecticide may also be used in tank mixtures in all states to control armyworms, bollworms (*Heliothis spp.*), boll weevil, cotton fleahopper, plant bugs (Lygus, Mirids), and spider mites as indicated in the following table.

TANK MIXTURE	RATE ACRE
LORSBAN 4E plus Ambush 2E	1 to 2 pints plus ⅛ to ⅔ pint
LORSBAN 4E plus Pounce 3.2E	1 to 2 pints plus ⅛ to ¼ pint
LORSBAN 4E plus Pydrin 2.4E	1 to 2 pints plus ⅛ to ⅓ pint
LORSBAN 4E plus Bolstar 6E	½ to 1 pint plus ⅔ to 1⅓ pints
LORSBAN 4E plus methyl parathion* Plus EPN*	1 pint plus 0.6 lb a.i. plus 0.6 lb a.i.

*Use only emulsifiable formulations containing these active ingredients (a.i.)

Mix the tank mixture components in sufficient water to ensure thorough coverage of plants (at least 1 gallon of spray per acre) and apply using aerial spray equipment. Treat when field counts indicate damaging insect populations are developing or present. Re-treat as necessary to maintain control.

In California and Arizona, use LORSBAN 4E at 1 to 2 pints per acre plus Monitor 4E at 1 to 2 pints per acre or LORSBAN 4E at 1 to 2 pints per acre plus Orthene 75S at 0.33 to 1.3 pounds per acre for control of armyworms, bollworms, cabbage looper, cotton aphids, cotton fleahopper, cutworms, grasshopper, omnivorous leafroller, pink bollworm, plant bugs (*Lygus, Mirids*), saltmarsh caterpillar, thrips, and whitefly (suppression). Apply in 10 to 25 gallons of water per acre with ground spray equipment or in 5 to 10 gallons of water per acre with aerial spray equipment. Treat when field counts indicate that damaging insect populations are developing or present. For tank mixtures which include Monitor 4E, apply before 65 percent of the bolls have opened. Re-treat as necessary to maintain control.

Restrictions: *Make no applications of these tank mixtures closer to harvest than the longest pre-harvest interval shown for any of the products in the tank mixture. Do not allow livestock to graze in treated areas. Do not feed gin trash or treated forage to livestock. Workers entering the field within 48 hours after application should wear protective clothing.*

FIGS: Use LORSBAN 4E at the rate of 2 quarts per acre for control of dried fruit beetle by application of sufficient water to the soil surface followed by incorporation into the top 3 inches of soil. Apply to fig orchard soil as a dormant application in late winter prior to bud swelling and prior to leaf formation.

Restrictions: *Make only one application per year. Do not apply within 7 months of harvest. Based on available residue data, use of LORSBAN 4E on figs is restricted to California.*

GRAPES: Use LORSBAN 4E insecticide for control of grape root borer by application just before the pest emerges from the soil. Mix 4½ pints of LORSBAN 4E with 100 gallons of water and apply 2 quarts of the diluted spray mixture to the soil surface on a 15 square foot area around the base of each vine. Do not allow spray to contact fruit or foliage.

Restrictions: *Do not make more than one application per season or apply within 35 days before harvest. Based upon available residue data, the use of LORSBAN 4E in grapes is restricted to states East of the Rocky Mountains.*

MINT: Use LORSBAN 4E by application as a broadcast foliar spray to control cutworms at the rate of 2 to 4 pints per acre and mint root borer at the rate of 4 pints per acre. Mix the specified dosage in water to give no less than 10 gallons of spray per acre and apply using ground spray equipment. For cutworm control, treat during May and June when field counts indicate damaging insect populations are developing or present. When larvae are less than ¾ inch in length, use the 2 pint rate. When larvae are ¾ inch or more in length, use the higher rate. **Make only one application during the growing season. Do not apply within 90 days before harvest.** For **mint root borer** control, apply post-harvest when field counts indicate damaging insect populations are developing or present. Follow treatment with approximately 1 acre inch of sprinkler irrigation immediately after application to incorporate the insecticide into the soil. **Make only one post-harvest application per season.**

NECTARINES, PEACHES: Use LORSBAN 4E insecticide for the control of peach tree borers by application as a trunk spray before newly hatched borers enter the trees. Mix 3 quarts of LORSBAN 4E with 100 gallons of water and apply as a coarse, low-pressure spray to give uniform coverage of tree trunks. Thoroughly wet all bark areas from ground level to scaffold limbs. Do not allow spray to contact fruit. Consult your State Agricultural Experiment Stations or Extension Service Specialists written recommendations for proper time to treat in your area.

LORSBAN 4E may also be used as a preplant dip application for non-bearing peach trees at the equivalent application rate of 3 quarts per 100 gallons of water for control of peach tree borer. Dip trees several inches above the grafting bud scar and plant immediately or allow to dry before returning to storage. Do not allow peach trees to remain in contact with the dip solution.

Restrictions: *Make only one application per season. Do not apply within 14 days before harvest. Do not allow meat or dairy animals to graze in treated orchards.*

ONIONS (dry bulb): Use LORSBAN 4E insecticide to control onion maggot by application as an in-furrow drench. Apply LORSBAN 4E at the rate of 1.1 fluid ounce per 1000 linear feet of row at an 18-inch row spacing. Use a minimum of 40 gallons of total drench per acre. Incorporate to a depth of 1 to 2 inches.

Restrictions: *Do not make more than one application per year.*

PEANUTS: Use LORSBAN 4E for control of lesser cornstalk borer by application as a directed spray to the base of the plants in an 8 to 10 inch band. Apply LORSBAN 4E at the rate of 2-4 pints per acre when field counts indicate damaging insect populations are developing or present. Mix the required dosage in enough water to ensure thorough coverage. Do not apply as a foliage application.

Restrictions: *Do not make more than one application per season. Do not harvest within 21 days after treatment. Do not feed treated peanut forage or hay to meat or dairy animals.*

SORGHUM: Use LORSBAN 4E insecticide for control of the following pests at the dosages indicated.

Sorghum midge (Apply when 30 to 50 percent of the seed heads are in bloom; repeat at 3-day intervals if necessary.)	½ pint per acre
Greenbugs, grasshoppers, yellow sugar cane aphid, and other aphids	½ to 1 pint per acre
Chinch bugs, lesser cornstalk borer (Apply as a directed spray toward the base of the plant using power-operated ground spray equipment with sufficient water to ensure coverage of an 8 to 12 inch band centered on the row. On plants less than 6 inches high, apply an 8 to 12 inch band over the row. Do not reduce the dosage for banded or directed applications. Concentrate the full labeled dosage rate in the treated zone.)	1 to 2 pints per acre
Webworms	1 pint per acre
Armyworms, corn earworm, cutworms	1 to 2 pints per acre.
European and southwestern corn borer	1½ to 2 pints per acre

Mix the specified dosage in enough water to ensure thorough coverage and apply using suitable aerial or ground spray equipment. To minimize chemical injury, do not apply LORSBAN 4E to drought stressed grain sorghum within 3 days following irrigation or rain except where the product is applied in irrigation water.

LORSBAN 4E insecticide may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of LORSBAN 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the injection period. See the Sprinkler Irrigation section of this label for further information.

Restrictions: *The treated crop is not to be used for grain, forage, fodder, hay or silage within 30 days after application of 1 pint of LORSBAN 4E per acre or within 60 days after application of rates above 1 pint per acre. Do not treat sweet varieties of sorghum. Do not apply more than 3 pints of LORSBAN 4E per acre per season.*

SOYBEANS: For use to control armyworms, bean leaf beetle, corn earworm, cutworms, European corn borer, grasshoppers, green cloverworm, lesser cornstalk borer, Mexican bean beetle, saltmarsh caterpillar and other woollybears, southern green stink bug, spider mites, and velvetbean caterpillar.

Soil Treatment: Use LORSBAN 4E at the rate of 1 to 2 pints per acre to control cutworms and lesser cornstalk borer. Mix the specified dosage in a minimum of 10 gallons of spray per acre and apply to the soil surface using suitable ground spray equipment. Equivalent rates of insecticide spray required per 100 feet of row for various row spacing are given in the accompanying table. For at-plant treatments apply the insecticide over the row in a 4 to 6-inch band in front of the planter shoe or press wheel or after the press wheel followed by a drag chain for light incorporation. Do not apply as an in-furrow treatment. For postemergence rescue treatments, apply as a directed spray in a 9 to 12-inch band at the base of the plant. To plants under 6 inches high apply over the top in a 6- to 12-inch band. Treat when field counts or conditions indicate that pests are or may become a problem.

Volume of Spray Per Acre	Fluid Ounces of Spray Required Per 100 Feet of Row for Various Row Spacing			
	36"	32"	28"	24"
10 Gallons	8.8	7.9	6.9	5.9
15 Gallons	13.2	11.8	10.3	8.8
20 Gallons	17.6	15.7	13.7	11.8

For suppression of wireworms, apply LORSBAN 4E at a rate of 4 pints per acre as a preplant broadcast spray to the soil surface followed by immediate soil incorporation to a depth of 3 to 4 inches. Use a minimum of 10 gallons of total spray per acre.

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Foliar Treatment: Use LORSBAN 4E at the following rate by application in sufficient water to ensure thorough coverage of treated plants

European corn borer, southern green stink bug — 2 pints per acre

Bean leaf beetle, cutworms, corn earworm, saltmarsh caterpillar and other woollybears — 1 to 2 pints per acre

Mexican bean beetle, armyworms — 1 to 1½ pints per acre

Velvetbean caterpillar, grasshoppers, green cloverworm, spider mites — ½ to 1 pint per acre

Apply as a broadcast spray using either aerial or ground equipment when field counts indicate damaging insect populations are developing or present, retreat as necessary to maintain control. For effective control of spider mites when large numbers of eggs are present, apply a second spray 3 to 5 days after initial treatment to control newly-hatched nymphs. **On determinate soybeans do not apply more than one application after pod set.**

LORSBAN 4E insecticide may also be applied through **sprinkler irrigation systems** as a postemergence broadcast application to control the above listed foliar pests. For best results, use the recommended rate of LORSBAN 4E per acre. Maintain vigorous tank agitation to assure uniformity of the application throughout the irrigation period. See the Sprinkler Irrigation section of this label for further information.

Restrictions: *Do not apply more than 6 pints of LORSBAN 4E per acre or 3 pounds of chlorpyrifos (active ingredient) per acre per season. Do not apply last treatment within 28 days before harvest nor apply last two treatments closer than 14 days apart. Do not allow livestock to graze in treated areas or otherwise feed treated soybean forage, hay, and straw to meat or dairy animals.*

STRAWBERRIES: Use LORSBAN 4E insecticide by application as a broadcast foliar spray to control strawberry bud weevil at the rate of 1 quart per acre. Apply in a minimum of 40 gallons of spray per acre when buds first appear and 10 to 14 days later. Do not apply after berries start to form or when berries are present. LORSBAN 4E should not be tank mixed with pesticides, surfactants, or fertilizer formulations unless prior use has shown the combination noninjurious under your current conditions of use. Phytotoxicity may occur when LORSBAN 4E is applied to strawberries experiencing high temperature and drought stress.

Restrictions: *For pre-bloom use only. Do not make more than two applications per season or apply within 21 days before harvest.*

SUNFLOWERS: For use to control cutworms, sunflower beetle larvae and adults, stem weevil, sunflower moth, banded sunflower moth, woollybears, seed weevil, and grasshoppers.

Preplant Incorporation Treatment: Use LORSBAN 4E insecticide at the following rates by application in sufficient water to the soil surface and incorporate into the soil.

Cutworms — 2 to 4 pints per acre

Use recommended rate in not less than 10 gallons of water per acre and apply as a broadcast spray to the soil surface using suitable power-operated ground spray equipment. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil using a disc, field cultivator or equivalent equipment.

Postemergence Treatment: Use LORSBAN 4E for control of the following pests at the dosage indicated by application in sufficient water to ensure thorough coverage of treated plants.

Cutworms — 2 to 3 pints per acre

Sunflower beetle larvae and adults, stem weevil, sunflower moth, banded sunflower moth, woollybears, and seed weevil — 1 to 1½ pints per acre

Grasshoppers — 1 pint per acre

Apply as a broadcast spray using either aerial (fixed-wing or helicopter) or power-operated ground spray equipment when field counts indicate that pests are or may become a problem. For cutworm control, a second treatment may be made 7 to 10 days later, if needed. For stem weevil control, optimal treatment time is within 5 to 7 days after adult weevils begin to appear. For sunflower moth control, make first application during early 1 to 5 percent bloom stage. A second treatment may be made 7 days later, if needed. For seed weevil control, treat when field counts indicate there are 10 to 12 adults per plant for oil crops and 1 to 3 adults per plant on confectionary crops. Additional treatments should be made at successive 7 to 10 day intervals if field counts indicate need to re-treat. For sunflower beetle larvae or adult control, treat when field counts indicate there are 10 larvae or 1 to 2 adults per seedling. Additional treatments may be made at successive 7 to 10 day intervals if field counts indicate need to retreat.

Restrictions: *Do not apply more than 9 pints of LORSBAN 4E per acre per season. Do not apply within 42 days before harvest. Do not allow livestock to graze in treated areas.*

SUGAR BEETS: Use LORSBAN 4E by application as a broadcast foliar spray to control beet armyworms at a rate of 1½ to 2 pints per acre and cutworms at a rate of 2 pints per acre. Treat when field counts indicate that damaging insect populations are or may be a problem. Mix the specified dosage with 2 to 5 gallons of water per acre and apply using suitable aerial spray equipment or with 10 to 30 gallons of water per acre when using power-operated ground spray equipment. Re-treat as necessary to maintain control.

Restrictions: *Do not apply within 30 days before harvest of beet roots and tops. Do not apply more than a total of 8 pints of LORSBAN 4E per acre per season. Do not allow livestock to graze in treated areas nor harvest treated beet tops as feed for meat or dairy animals within 30 days after last treatment.*

SWEET POTATOES: Use LORSBAN 4E to reduce the feeding damage caused by populations of *Conoderus* wireworm, *Systena* flea beetle and the sweet potato flea beetle. Apply at the rate of 4 pints per acre as a broadcast (overall) spray to the soil surface followed by incorporation. Mix the specified dosage with enough water to obtain uniform coverage and apply as a coarse spray using suitable ground spray equipment. Incorporate the insecticide to a depth of 4 to 6 inches as soon as possible after application by using a rotary hoe, disc cultivator, or other suitable incorporation equipment. Plant the crop in the usual manner no later than 14 days after treatment (any delay in planting will reduce the length of time that LORSBAN 4E will protect against feeding damage). LORSBAN 4E will not control false wireworms or white fringe beetle or other grubs that attack sweet potatoes.

Restrictions: *Do not make more than one application per season. Do not harvest within 125 days of treatment.*

TOBACCO: Use LORSBAN 4E for preplant treatment to control larvae of cutworms, flea beetles, mole crickets, root maggots, and wireworms. Apply 2 to 3 quarts of LORSBAN 4E per acre in not less than 10 gallons of water as a broadcast (overall) spray to the soil surface one week before transplanting. Immediately following application, incorporate the insecticide into the soil to a depth of 2 to 4 inches using suitable equipment. The application of LORSBAN 4E will also suppress the movement of imported fire ants into treated fields.

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To control the above insects and low to moderate populations of rootknot nematodes in North Carolina, South Carolina, and Virginia, use LORSBAN 4E at the rate of 5 quarts per acre. To control the above insects and moderate populations of rootknot nematodes in all tobacco growing regions, use LORSBAN 4E in a tank mix with Nemacur 3 at the rate of 2 quarts of LORSBAN 4E plus 4 quarts of Nemacur 3 per acre. Read and carefully follow all applicable directions, restrictions, and precautions on labeling for Nemacur 3 used in combination with LORSBAN 4E. Apply the specified dosage in not less than 10 gallons of water as a broadcast (overall) spray to the soil surface 24 to 48 hours before bedding and transplanting. Immediately following application incorporate into the soil to a depth of at least 4 inches using suitable equipment. Where the nematode species *Meloidogyne arenaria* or *M. javanica* are present or high populations of *M. incognita*, apply TELONE® II soil fumigant at the recommended label rate.

Restrictions: *Do not make more than one application per season.*

TREE FRUITS: Use LORSBAN 4E as a dormant or delayed dormant spray at the rates indicated to control the following insects on the crops listed. While LORSBAN 4E may be used without oil, oil is recommended for additional pest control.

Crop	Insect	Dosage LORSBAN 4E
Apples	Rosy apple aphid San Jose scale Lygus Pandemis leafroller Climbing cutworms	
Pears	San Jose scale Climbing cutworms Pear psylla adults	
Plums, Prunes	San Jose scale Mealy plum aphid Climbing cutworms Peach twig borer	¾ to 1 pint
Almonds Peaches, Nectarines	San Jose scale Peach twig borer Climbing cutworms	

Tank mix the specified dosage with 1 to 2 gallons of a petroleum spray oil recommended for dormant use in 100 gallons of water and spray the entire tree by application to runoff using suitable ground spray equipment. (SEE PRECAUTIONS FOR USE IN CALIFORNIA.) For low volume (concentrate) sprays (40 to 100 gallons of spray mixture per acre), use the same amounts of LORSBAN 4E and spray oil per acre required for application as a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use the higher dosage of LORSBAN 4E for severe infestations. Use oil as recommended by your State Agricultural Experiment Station or Extension Service Specialist.

Precautions: Because cold or dry conditions may cause LORSBAN 4E plus oil sprays to infuse trees resulting in bud damage or drop, do not apply until winter rains or irrigation has replenished soil moisture such that bark and twigs are not desiccated.

Additional Precautions Specific to California: Use a minimum of 250 gallons of total spray volume per acre. Do not use more than 4 pints of LORSBAN 4E per acre. Do not use more than 4 gallons of spray oil per acre on almonds, peaches, or nectarines. Do not use any adjuvants or surfactants in addition to or as a substitute for a petroleum spray oil in a tank mix with LORSBAN 4E. Do not apply on almonds in the following counties in California: Butte, Colusa, Glenn, Solano, Sutter, Tehama, Yolo, and Yuba.

Restrictions: *Make only one application during the dormant season. Do not allow meat or dairy animals to graze in treated orchards.*

TREE NUTS: Use LORSBAN 4E at the dosages indicated by application as a foliar spray to control pests listed in the following table. Mix the required dosage in sufficient water to ensure thorough and complete coverage of the foliage and crop and apply as a concentrate or dilute spray using conventional, power-operated spray equipment. For dilute sprays applied to tree nut crops, mix the required dosage in sufficient water to allow for spray to runoff. For concentrate sprays, apply an equivalent amount of LORSBAN 4E per acre. Treat when pests appear or in accordance with local conditions. To suppress pecan leaf scorch mite on pecans, use in a preventative program. For aerial application on pecans, apply 2 to 4 pints of LORSBAN 4E in 5 to 15 gallons of spray volume per acre. Insect control by aerial application may be less than control by ground application because of less coverage. For ant control on pecans, do not apply where weed growth or other obstructions would impede uniform coverage of the orchard floor. For best pecan *Phylloxera* control, use 2 applications 7 to 10 days apart starting at bud swell and ending by early leaf expansion. Consult your State Agricultural Experiment Station, Certified Pest Control Advisor, or Extension Service specialist for specific use information in your area.

Crop	Insects Controlled	Dosage LORSBAN 4E	Restrictions
Almonds	Navel orangeworm Peach twig borer San Jose scale	4 pints per acre	Make no more than 3 applications per season on almonds and filberts and no more than 2 applications per season on walnuts. Do not apply within 14 days of harvest. Do not allow livestock to graze in treated orchards.
Filberts	Eyespotted bud moth Filbert aphid Filbert leafroller Filbertworm Obliquebanded leafroller Omnivorous leafroller Winter moth	3 to 4 pints per acre	
Walnuts	Codling moth Walnut scale	4 pints per acre	
Pecans	Black pecan aphid Hickory shuckworm Pecan leaf scorch mite (suppression)	2 pints per 100 gallon	Make no more than 5 applications per season. Do not apply within 28 days of harvest. Do not allow livestock to graze in treated orchards. For dilute spray apply 200 to 600 gallons per acre. Make no applications of tank mixtures closer to harvest than the longest pre-harvest interval shown for any of the products in the tank mixture.
	Pecan nut casebearer Phylloxera spp. Fall webworm Spittlebug	1 pint per 100 gallon	
	Fire ants and other ant species (orchard floor)	2 pints per acre as a ground spray	
	Yellow pecan aphid complex	1 pint of LORSBAN 4E plus 2⅔ ounce of Pydrin 2.4E or 2.6 ounce of Cymbush 3E or 3 ounce of Ammo 2.5E per 100 gallon	

VEGETABLES: Use LORSBAN 4E to control root maggots on the following crops at the dosages indicated.

Cauliflower 1.6 to 2.4 fl oz per 1000 linear feet of row

Broccoli, Brussels Sprouts, Cabbage, Chinese Cabbage, Collards, Kale, Kohlrabi, Turnips 1.6 to 2.75 fl oz per 1000 linear feet of row

For **direct seeded crops** apply the specified dosage in a water-based spray as a 4-inch wide band over the row at planting time, behind the planter shoe and in front of the press wheel to achieve shallow incorporation. Apply in a minimum of 40 gallons of total spray per acre.

For **transplanted crops,** apply LORSBAN 4E as a water based spray directed to the base of the plants immediately after setting. Use a minimum of 40 gallons of total spray per acre. Do not add any additional adjuvants, surfactants or spreader stickers. **Do not apply as a foliage application.**

Restrictions: *Do not apply more than 2 pints of LORSBAN 4E to cauliflower planted in 40-inch rows. Use proportional amounts for other row spacings not to exceed 4 pints of LORSBAN 4E per acre. Do not apply more than 2.6 pints of LORSBAN 4E per acre to broccoli, Brussels sprouts, cabbage, Chinese cabbage, collards, kale, kohlrabi, and turnips planted in 40-inch rows or more than 4⅓ pints of LORSBAN 4E per acre to these crops in 20-inch rows (or two rows per bed). Use proportional amounts for other row spacings not to exceed 4⅓ pints of LORSBAN 4E per acre. Do not make more than one application per season or apply within 30 days before harvest.*

Radishes 1.0 fl oz per 1000 linear feet of row

Apply the specified dosage as a water-based drench in the seed furrows with the seed at planting time. Use a minimum of 40 gallons of total drench per acre.

Restrictions: *Do not apply more than 5⅓ pints of LORSBAN 4E per acre or make more than one application per season.*

Rutabagas 1.6 to 3.3 fl oz per 1000 linear feet of row

Apply the specified dosage in a water-based spray as a 4-inch wide band over the row at planting time, behind the planter shoe and in front of the press wheel to achieve shallow incorporation. Use a minimum of 40 gallons of total spray per acre.

Restrictions: *Do not apply more than 4⅓ pints of LORSBAN 4E per acre or make more than one application per season. Do not use rutabaga tops for food or feed purposes.*

To avoid phytotoxicity in vegetable crops, do not mix with other pesticide products or treat plants that are under extreme heat and drought stress.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

Storage: Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 100°F for extended periods of time. Storage below 20°F may result in formation of crystals. If product crystallizes, store at 50 to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

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Pesticide Disposal: Pesticide wastes are toxic. 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 Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. For reusable portable containers, do not rinse or put any other material into container. When returning reusable portable container, seal all openings and return to owner.

Or

Container Disposal: Triple rinse (or equivalent). Then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

ATTENTION

Do Not Cut or Weld Container

WARRANTY LIMITATIONS AND DISCLAIMER

The Dow Chemical Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions therein under normal conditions of use. THIS IS THE ONLY WARRANTY MADE ON THIS PRODUCT. NO OTHER EXPRESS AND NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OUTSIDE OF THIS LABEL. Therefore, neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.) under abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes, etc.) or under conditions not reasonably foreseeable to or beyond the control of seller.

When buyer or user suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), buyer or user must promptly notify in writing The Dow Chemical Company of any claims to be eligible to receive either remedy given below. The EXCLUSIVE REMEDY OF THE BUYER OR USER and the LIMIT OF LIABILITY of The Dow Chemical Company or any other seller will be one of the following, at the election of The Dow Chemical Company:

(1) **Refund of purchase price** paid by buyer or user for product bought, **or**

(2) **Replacement** of amount of product used.

The seller **will not be liable for consequential or incidental damages or losses.**

The terms of this Warranty Limitations And Disclaimer cannot be varied by any written or verbal statements or agreements. Any employee or sales agent of the seller is not authorized to vary or exceed the terms of this Warranty Limitations And Disclaimer in any manner.

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DISCARD PREVIOUS SPECIMEN LABELS

REVISIONS INCLUDE:
1) REVISED SPRINKLER IRRIGATION SECTION, INCLUDING ADDITION OF MICRO SPRINKLER
2) ADDED CHEMIGATION INSTRUCTIONS FOR CITRUS AND CRANBERRIES
3) CLARIFICATION OF APPLICATION INSTRUCTIONS FOR BILLBUGS, CHINCH BUGS, AND FLEA BEETLE IN CORN; AND CHINCH BUG AND LESSER CORNSTALK BORER IN SORGHUM
4) EXTENSION OF CHEMIGATION TO CONTROL CORN ROOTWORM LARVAE IN CORN OUTSIDE OF NEBRASKA
5) CLARIFICATION OF SORGHUM CROP CATEGORY
6) UPDATED SPECIAL LOCAL NEED SECTION