



U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:

28293-222

Date of Issuance:

APR 21 1993

NOTICE OF PESTICIDE:
 X Registration
 Reregistration

Term of Issuance: **Until Reregistration**

(Under FIFRA, as amended)

Name of Pesticide Product:
Unicorn Sevin Brand Carbaryl Insecticide

Name and Address of Registrant (include ZIP Code):

Barry J. Santerre
Unicorn Laboratories
1000 118th Avenue North
St. Petersburg, Florida 33716

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the following label changes:

- a. Revise the EPA Registration Number to read, "EPA Reg. No. " 28293-222."
- b. Change "wetlands" in the Environmental Hazards statement to "areas where surface water is present or to intertidal areas below the mean high water mark."
- c. Correct the typographical errors and spellings as indicated in red ink on pages 1, 11, 12, and 14.

Signature of Approving Official:

DEANIS H. EDWARDS

Date:

APR 21 1993

0-9-20

3. Submit two copies of the revised final printed label for the record.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,

DENNIS H. EDWARDS

Dennis H. Edwards, Jr.
Product Manager 19
Insecticide & Rodenticide Branch
Registration Division (H7505C)

3420

UNICORN

SEVIN^(R) brand 2¹/₂ Carbaryl Insecticide

Home and Garden Insecticide

ACTIVE INGREDIENTS:

Carbaryl (1-naphthyl N-methylcarbamate)..... 21.3% by wt.

INERT INGREDIENTS:..... 78.7% by wt.

(Contains 2 Pounds Carbaryl Per Gallon)

Sevin is a registered trademark of Rhône-Poulenc for carbaryl insecticides.

ACCEPTED
with COMMENTS
in EPA Letter Dated

APR 21 1993

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
28293-222

KEEP OUT OF REACH OF CHILDREN

CAUTION

See Side/Back Panel for Additional Precautionary Statements.

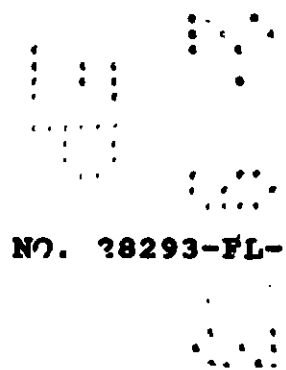
NET CONTENTS:

Manufactured by:

**UNICORN LABORATORIES
1000 118th Avenue North
St. Petersburg, FL 33716**

EPA REG. NO. 28293-

EPA EST. NO. 28293-FL-1



PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: May be harmful if swallowed. Avoid breathing of spray mist. Do not take internally. Avoid contact with eyes, skin or clothing. Wear regular long-sleeved work clothing. Change to clean clothing daily. Wash hands and face before eating. Wash thoroughly after handling.

Statement of Practical Treatment

IF SWALLOWED: Induce vomiting and seek medical attention immediately.

IF IN EYES Flush eyes with plenty of water. Wash skin **OR ON**
SKIN: thoroughly with soap and water.

NOTE TO PHYSICIAN: Carbaryl is a moderate reversible cholinesterase inhibitor. Atropine is antidotal. Do not use 2-PAM, opiates, or cholinesterase inhibiting drugs.

Environmental Hazards

This product is extremely toxic to aquatic and estuarine invertebrates. Do not apply directly to water and wetlands. Do not contaminate water by cleaning equipment or disposal of wastes. Do not apply when weather conditions favor drift from area treated.

change

BEE CAUTION: MAY KILL HONEYBEES IN SUBSTANTIAL NUMBERS. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops and weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area. Contact your Cooperative Agricultural Extension Service or your local representative for further information.

DIRECTIONS FOR USE

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

Shake all containers prior to use. Do not reuse empty containers or measuring devices for other purposes. Apply when insects or damage appear. Repeat as necessary to maintain control, unless spray interval is specified.

Do not plant rotational food and feed crops not listed on this or other carbaryl labels in carbaryl treated soil.

PLANT RESPONSE PRECAUTIONS

Carbaryl insecticide injures Boston Ivy, Virginia creeper, and maidenhair fern. During early season, it may also injure Virginia and sand pines.

HOSE END SPRAYER USE

This product readily disperses in water to form a spray that can be applied with garden hose applicators (hose-end sprayers) to the crops listed. To ensure adequate coverage, use moderate to high water pressure when applying through hose-end sprayers. Calibrate to deliver 1 fluid ounce per gallon of spray mixture.

VEGETABLE CROPS: For control of all the vegetable pests listed below, apply this product in adequate volume to effectively cover both the upper and lower surfaces of the plant.

NOTES: 1) This product is not registered for use on celery and sweet potato in California; 2) Do not treat asparagus more than once every 3 days as excessive residues may result; and 3) The number in parenthesis following each vegetable crop grouping refers to the minimum number of days that must be observed between the date of the last application and the date of harvest.

CROPS

Beans (including Black-eyed peas, Crowder or Southern peas, Dry beans, Green beans, Lima beans, Navy beans, and Snap beans); Carrots, Corn, Cucumber, Eggplant, Melons, Okra, Peanuts, Pepper, Potato, Pumpkin, Squash, Sweet Potato, Tomato - (0 days until harvest).

Broccoli, Brussels sprouts, Cabbage, Cauliflower, Cowpeas, Garden beet roots, Head lettuce, Horseradish, Kohlrabi, Parsnips, Peas, Radishes, Rutabagas, Salsify roots, Turnip roots - (3 days until harvest).

Celery, Chinese cabbage, Collards, Dandelion, Endive (Escarole), Garden beet tops, Hanover salad, Kale, Mustard greens, Leaf lettuce, Parsley, Salsify tops, Spinach, Swiss chard, Turnip tops - (14 days until harvest).

PESTS

Alfalfa caterpillar	Green cloverworm	Spittlebugs
Apache cicada	Harlequin bug	Squash bugs
Armyworm	Imported cabbageworm	Stink bugs
Asparagus beetle	Japanese beetle	Sweet potato hornworm
Aster leafhopper	Lace bugs	Sweet potato weevil
Bean leaf beetle	Leafhoppers	Tarnished plant bug
Blister beetles	Limabean pod borer	Three omered alfalfa hopper
Chinch bug	Lygus bugs	Thrips
Colorado potato beetle	Melonworm	Tomato hornworm
Corn earworm	Mexican bean beetle	Tomato pinworm
Corn rootworm (adults)	Pea leaf weevil	Tortoise beetles
Cowpea curculio	Pea weevil	Velvetbean caterpillar
Cucumber beetles	pickleworm	Webworms
Cutworms	red necked peanut worm	Western bean cutworm
European corn borer	Sap beetles	Whitefringed beetle (adults)
Fall armyworm	Southwestern corn borer	Yellowstriped armyworm
Flea beetles		
Grasshoppers		

FRUIT AND NUT CROPS

For control of all fruit and nut pests listed below, use sufficient spray volume to obtain thorough coverage (spray until run-off). Direct applications toward the lower and upper leaf surfaces, between fruit and nut clusters, and limbs and tree trunks to optimize insect control.

NOTES: 1) To avoid undesired apple thinning, delay use until at least 30 days after full bloom; 2) Carbaryl insecticide may injure early dawn and sunrise strawberries varieties on the Delmarva Peninsula; 3) When used on cranberries, SEVIN^(R) brand carbaryl may kill shrimp and crabs; and 4) The number in parenthesis following each fruit and nut crop grouping refers to the minimum number of days that must be observed between the date of the last application and the date of harvest.

CROPS: Blueberries, Filberts, Pecans, Walnuts - (0 days until harvest).
 Apples, Cherries, Cranberries, Peaches, Pears, Plums, Prunes, ✓
 Strawberries - (1 day until harvest).
 Apricots, Nectarines - (3 days until harvest).
 Citrus fruits (such as Grapefruit, Lemons, Limes, Oranges,
 Tangelos, Tangerines, Citrus citron, Kumquats and Hybrids) - (5 days until
 harvest).
 Blackberries, Boysenberries, Dewberries, Loganberries, Raspberries,
 Grapes - (7 days until harvest).
 Almonds - (28 days until harvest).

PESTS

Apple aphid	European raspberry	Pear psylla
Apple maggot	aphid	Pear rust mite
Apple mealybug	Eyespotted budmoth	Pecan leaf phylloxera
Apple pandemis	Fall webworm	Pecan nut casebearer
Apple rust mite	Filbert aphid	Pecan spittlebug
Apple sucker	Filbert leafroller	Pecan weevil
Avocado leafroller	Fibertworm	Periodical cicada
Bagworms	Forbes scale	Plum curculio
Black cherry aphid	Fruittree leafroller	Prune leafhopper
Black margined aphid	Frosted scale	Raspberry sawfly
Black scale	Grape berry moth	Redbanded leafroller
Blueberry maggot	Grape leafhopper	Rose chafer ✓
Brown soft scale	Grape leaffolder	Rosy apple aphid
Calico scale	Green fruitworm	Saltmarsh caterpillar
California orangedog	Hickory shuckworm	San Jose scale
California pearslug	Japanese beetle	Snowy tree cricket
(pear sawfly)	June beetles	Strawberry weevil
California red scale	Leafhoppers	Tarnished plant bug
Cherry fruitworm	Leafrollers	Tentiform leafminers
Cherry maggot	Lecanium scales	Twig girdler
Citricola scale	Lesser appleworm	Tussock moth
Citrus cutworm	Lesser peachtree borer	Variiegated leafroller
Citrus room weevil	Lesser webworm	Walnut caterpillar
Citrus snow scale	Meadow spittlebug	Western grapeleaf
Coding moth	Mealy plum aphid	skeletonizer
Cranberry fireworms	Naval orangeworm	Western tussock moth
Cranberry fruitworm	Olive scale	Western yellowstriped
Cucumber beetles	Omnivorous leaftier	armyworm
Cutworms	(strawberry fruitworm)	West Indian sugarcane
Eastern tent	Omnivorous leafroller	borer (adults)
caterpillar	Orange tortrix	White apple leafhopper
Eightspotted forester	Oriental fruit moth	Wolly apple aphid
European apple sawfly	Oystershell scale	Yellowheaded fireworm
European earwig	Peach twig borer	
European fruit lecanium	Pear leaf blister mite	

TREES AND ORNAMENTAL PLANTS

Thorough coverage of upper and lower leaf surfaces and trunks, stems and twigs is necessary for optimum control of tree and ornamental pests. Apply to each of these areas until run-off is observed.

CROPS: Trees (including Shade trees, Shelter belts, Plantations, Parks and Recreational areas), Ornamentals (including Roses and other Herbaceous plants), Woody plants, and Shrubs.

PESTS

Ants	Gall midges	Periodical cicada
Apple aphid	Gall wasps	Pine sawfly
Armyworm	Grasshoppers	Pine spittlebug
Azalea leafminer	Greenstriped mapleworm	Pitch pine tip moth
Bagworms	Gypsy moth	Plant bugs
Birch leafminer	Hackberry nipplegall maker	Poinsettia hornworm
Blister beetle	Holly budmoth	Psyllids
Boxelder bug	Holly leafminer	Puss caterpillar
Boxwood leafminer	Jackpine budworm	Redhumped oakworm
Browntail moth	Japanese beetle	Rose aphid
Cankerworms	Jeffrey pine needle- miner	Rose chafer
Catalpa sphinx	Lace bugs	Roseslug
Chiggers	Leafhoppers	Saddle prominet ✓
Cooley spruce gall adelgid	Leafrollers	Sawflies (exposed)
Cutworms	Locust borer	Scale insects
Cypress tip moth	Maple leafcutter	Sowbugs
Douglas-fir tussock moth	Mealybugs	Spiny Elm caterpillar
Eastern spruce gall adelgid	Mimosa webworm	Springtails
Elm leaf aphid	Nantucket pine tip moth	Spruce budworm
Elm leaf beetle	Oak leafminers	Spruce needleminer
Elm spanworm	Oak leaf skeletonizer	Subtropical pine tip-moth
Triophyid mites	Oakworm complex	Tent caterpillar
European pine shoot moth	Oleander caterpillar	Thrips (exposed)
Fall armyworm	Olive ash borer	Ticks
Flea beetles	Orangestripped oak- worm	Tree hoppers
Fuller rose beetle	Orange tortrix	Walnut caterpillar
		Webworm
		Western hemlock looper
		Western spruce budworm
		Willow leaf beetles
		Yellow poplar weevil

LAWNS AND RECREATIONAL AREAS

For optimum control of lawn pests it is essential to ensure good penetration of the turf. For best results mow lawn and make applications after watering or rain. Following application, additional watering of lawn will enhance white grub control. For imported fire ant control, apply directly to the mound and surrounding area (do not disturb mounds prior to treatment). Treat new mounds as they appear. A volume of 16 to 24 fluid ounces of this product will cover approximately 3500 square feet when diluted as directed.

PEST CONTROL

Apply 16 fluid ounces of this product to cover 3000 sq. ft. (32 fluid ounces per 6000 sq. ft.) for control of: Ants, Armyworm, Centipede, Chiggers, Cutworms, Earwigs, Essex skipper, European chafer, Fall armyworm, Fiery skipper, Grasshoppers, Green June beetles grubs, June beetles, Leafhoppers, Lucerne moth, Millipedes, Adult mosquitoes, Sowbugs, Spittlebugs, Springtails, Ticks, Yellowstriped armyworm.

Apply 16 fluid ounces of this product to cover 1,350 sq. ft. (32 fluid ounces per 2,700 sq. ft.) for control of: chinch bugs, Sod webworms, Bluegrass billbug, European crane fly, Fleas and White grubs (such as Japanese beetle, Chafer beetle and Phyllophaga spp. larvae).

ADULT MOSQUITO CONTROL

For optimum results, treatments should be made in the early morning or late evening, when adult mosquitoes are most active. In yards and recreational areas, apply to ornamentals, woody plants, shrubs, and other areas where adult mosquitoes congregate. (NOTE: CARBARYL MAY KILL SHRIMP AND CRABS. OBSERVE BEE CAUTION.)

PEST CONTROL AROUND BUILDINGS

This product may be used around buildings such as homes, apartments, warehouses, barns and municipal and recreational areas to control the pests listed below. Thoroughly wet the outside perimeter of dwellings and other areas where pests tend to congregate.

PESTS

Brown dog tick, earwigs, fleas and millipedes.

CONTROL OF TICKS WHICH TRANSMIT LYME DISEASE

For control of juvenile and adult Ixodes spp. ticks (Deer tick Bear tick, and Black legged tick) and Amblyomma spp. ticks (Lone Star tick).

Begin application in late spring or early summer (May/June). Thoroughly treat entire lawn, perimeter wooded areas, and property boundaries including shrub beds, ornamental planting, and wooded areas where exposure to ticks may occur. Retreat at 3 to 4 week intervals since ticks may be reintroduced from surrounding areas by animals.

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VEGETABLE CROPS

All dosages refer to teaspoonful of this product per gallon of water. Do not exceed maximum dosage rate.

CROP	INSECT		TEASPOONFUL/ GALLON	PRE HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Asparagus	Asparagus beetles Grasshoppers		4 to 8	1	Treat ferns or brush growth. Do not treat more than once every 3 days.
	Apache cicada Asparagus beetle		8 to 16	Post harvest application only	
Beans (Including black-eyed peas, cowpeas, crowder or southern peas, dry beans, green beans, lima beans, navy beans and snap beans)	Blister beetles Mexican bean beetle		2 to 4		
	Alfalfa caterpillar				
	Leafhoppers				
	Three cornered alfalfa hopper				
	Thrips		4	0 (except cowpeas)	
	Velvetbean caterpillar				
	Western bean cutworm				3 (cowpeas)
	Armyworm				
	Fall armyworm				
	Grasshoppers		4 to 6		
Tarnished plant bug					
Webworms					
Limabean pod borer		8			
Lygus bugs					
Stink bug					
Broccoli Brussels sprouts Cabbage Carrots Cauliflower Celery Chinese cabbage Collards Dandelion begin Endive (Escarole) Garden beet Hanover salad Horseradish Kale Kohlrabi Lettuce	Flea beetles		2 to 4	0 (carrots, okra)	DO NOT USE ON CELERY IN CALIFORNIA
	Harlequin bug				
	Leafhoppers				
	Lygus bugs		4 to 6		
	Spittlebugs				
	Grasshoppers				
	Armyworm		4 to 8		
	Imported cabbageeworm				
	Stink bugs				
	Tarnished plant bug				
				3 (broccoli, brussels sprouts, cabbage, cauliflower, garden beet roots, head lettuce, horseradish, kohlrabi, parsnips, radishes, rutabagas,	Observe plant response precautions. Lettuce: treat on a 5 to 7 day schedule after heads to form.

Vegetable Crops Cont'd		TEASPOONSFUL/ GALLON	PRE HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
CROP	INSECT			
Mustard greens Okra, Parsnips	(See previous page)	(See previous page)		

Parsley Radishes Rutabagas Salsify Spinach Swiss chard Turnips	(See previous page)	(See previous page)	14	(chinese cabbage, celery, collards, dandelion, endive (escarole), garden beet tops, Hanover salad, kale, mustard greens, leaf lettuce, parsley, salsify tops, spinach, Swiss chard and turnip tops) ✓
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Corn	Amyworm	Grass-hoppers	4 to 8	0	OBSERVE BEE CAUTION For insects attacking silks and ears, apply at 1 to 6 day intervals starting when first silks appear and continuing until silks begin to dry. For larvae in whorl and foliage feeders, apply as necessary. Optimum timing and good coverage are essential for effective control.
	Chinch bug	Japanese beetle			
	Corn earworm	Leafhoppers			
	Corn rootworm (adults)	Sap beetles			
	European corn borer	Southwestern corn borer			
	Fall army-worm				
	Flea beetles				
	Western bean cutworm		8		Treat when infestation averages 15% and at 90 to 100% tassel emergence. Treatment after 100% silk emergence will reduce effectiveness.

Cucumber Melons	Pickleworm	Melonworm	2 to 4		
Pumpkin Squash	Cucumber beetles	Grasshoppers	4	0	✓
	Flea beetles	Leafhoppers			
		Squash bugs			

Vegetable Crops Cont'd

CROP	INSECT	TEASPOONSFUL/ GALLON	PRE HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Potato	Bean leaf			
Tomato	beetle			
Eggplant	Blister	4	0	
Pepper	beetles		(except peas)	
Peanuts	Colorado		3	
Peas	potato beetle		(peas)	
	Cucumber			
	beetles			
	Flea beetles			
	Green			
	cloverworm			
	Japanese beetle			
	Alfalfa			
	caterpillar	6	0	
	Amyworm		(except peas)	
	Corn earworm		3	
	Grasshoppers		(peas)	
	European			
	corn borer	4 to 8		
	Fall armyworm			
	Lace bugs			
	Stink bugs			
	Cutworms	6 to 8		
Sweet	Corn earworm			Apply as a foliar spray as needed. Full coverage is essential. Use lower rate on young plants and higher rates on mature plants. DO NOT USE IN CALIFORNIA.
Potato	Cucumber			
	beetles	4 to 8		
	Flea beetles			
	Grasshoppers			
	Yellowstriped armyworm	8	0	
	Sweet potato weevil	4 to 8		

FRUIT AND NUT CROPS

All dosages refer to teaspoonsful of this insecticide per gallon of water. Use sufficient spray gallonage to obtain thorough coverage. (Six teaspoons equal one fluid ounce).

CROP	INSECT	TEASPOONSFUL/ GALLON	PRE HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Apple Thinning				
(Apples Only)		1 to 2	1	Apply 1 full coverage dilute spray between 10 and 25 days after full bloom. If factors such as tree age, variety, nutrition, previous crop, pruning, bloom and degree of set favor excessive fruit thinning with this product, exercise caution to avoid possible yield reduction. For easily thinned varieties

CROP	INSECT	PRE HARVEST		SPECIFIC DIRECTIONS	
		TEASPOONSFUL/ GALLON	INTERVAL (DAYS)		
		2 to 4		<p>including Cortland, Grimes, Jonathan, McIntosh, Orleans, Rome Puritan, Red Delicious, Winesap Yellow Newton.</p> <p>For difficult to thin varieties including Baldwin, Ben Davis, Duchess, ✓ Early McIntosh, Golden Delicious, Lady Apple, Northern Spy, Rhode Island Greening, Steele Red, Turley, Wealthy, Yellow Transparent and York Imperial.</p>	
Almond	Peach twig borer San Jose scale Navel orangeworm	Fruittree leafroller	4	28	<p>Apply in "popcorn" or petal fall stages and again when the May brood of the peach twig borer begins to hatch or thereafter as needed. Time early and mid season applications to correspond to moth flight peaks. ✓ Make a late season application at initiation of hull split or up to 10% hull split.</p>
Apples Pears	Apple aphid Apple maggot Apple mealybug Apple rust mite Apple sucker Bagworms California pearslug (pear sawfly) Coding moth Eastern tent caterpillar European apple sawfly Eyespotted bud moth Forbes scale Fruittree leafroller	Lesser appleworm Oystershell scale Orange tortrix Pear leaf blister mite Pear psylla Pear rust mite Periodical cicada Redbanded leafroller Rosy apple aphid San Jose scale Tarnished plant bug Tentiform leafminers White apple leafhopper Woolly apple aphid	4	1	<p>To avoid undesired apple thinning, delay use until at least 30 days after full bloom.</p> <p>For psylla control, apply when eggs hatch or young nymphs are present. ✓</p> <p>For optimum scale control, apply when crawlers are present.</p>

CROP	INSECT	PRE HARVEST		SPECIFIC DIRECTIONS
		TEASPOONSFUL/ GALLON	INTERVAL (DAYS)	
	Green fruitworm Japanese beetle	Yellowheaded fireworm Lecanium scales		
Blackberries Raspberries Dewberries (including boysenberries and loganberries) Grapes Strawberries	European fruit lecanium European raspberry Grape leaf-hopper Grape leaf-folder Japanese beetle Leafhoppers Leafrollers Meadow spittlebug Omnivorous leaf-tier (strawberry fruitworm)	Rose chafer Snowy tree cricket Strawberry weevil Western grapeleaf skeletonizer Yellow striped army-worm	4 to 8	Apply before first brood leaffolder larvae emerge from rolls. 1 (strawberries) 7 (blackberries dewberries raspberries boysenberries loganberries and grapes)
	Cutworms Eight spotted forester Grape berry moth Japanese beetle Omnivorous leafroller	Orange tortrix Raspberry sawfly Redbanded leafroller Saltmarsh caterpillar	8	
Blueberries	Blueberry maggot Cherry fruit worm Cranberry fruitworm	European fruit lecanium Japanese beetle	6	0 Apply 3 weeks before harvest and repeat as necessary.
Citrus Fruits (such as grapefruit, lemons, limes, oranges, tangelos, tangerines, citrus citron, kumquats, and hybrids)	Avocado leafroller California orangedog Citrus cutworm Citrus root weevil Fruittree leafroller	Orange tortrix Western tussock moth West Indian sugarcane borer (adults)	4	5 Do not apply less than 10 gallons of dilute spray mixture per mature tree. May be mixed with petroleum oils commonly used on citrus.
	Black scale Brown soft scale California red scale Citricola scale	Citrus snow-scale Yellow scale Yellow scale	3 to 4	

Boysenberries

Fruit & Nut Crops continued

CROP	INSECT	PRE HARVEST		SPECIFIC DIRECTIONS	
		TEASPOONSFUL/ GALLON	INTERVAL (DAYS)		
Cranberries	Cutworms	Japanese Leafhoppers Rose chafer	6 to 12	1	CAUTION: May kill shrimp and crabs. Do not use in areas where these are important resources. Apply in late bloom and as needed 7 to 10 day intervals.
	fireworms				
	Cranberry				
Filberts	Filbert aphid Filbert leafroller Filbertworm		4	0	Apply when leafroller eggs are hatching. Repeat on first appearance of adult filbert moths and again 3 to 4 weeks later.
Apricots	Apple pan-	Oriental	4	1	For optimum scale control apply when crawlers are present.
Cherries	demis	fruit moth			
Nectarines	Black	Oystershell		3	For lesser peachtree borer control, spray limbs and tree trunks thoroughly, weekly during moth flight.
Peaches	cherry	scale			
Plums	aphid	Peach twig		3	(apricots and nectarines)
Prunes	Brown soft	borer			
	scale	Periodical cicada			
	Cherry	Lesser peach-			
	fruitworm	tree borer			
	Cherry maggot	Mealy plum			
	Cucumber	aphid			
	beetles	Olive scale			
	European	Oriental fruit			
	earwig	moth			
	Eyespotted	Oystershell			
	bud moth	scale			
	Forbes scale	Peach twig borer			
	Fruitree	Periodical			
	leafroller	cicada			
	Green	Plum curculio			
	fruitworm	Prune leaf-			
	Japanese	hopper			
	beetle	Redbanded			
	June beetles	leafroller			
	Lecanium	Rose chafer			
	scales	San Jose scale			
	Tarnished plant bug				
	Variegated leafroller				
	Coding moth	Orange tortrix	3 to 4		
	Eastern tent	Tussock			
	caterpillar	moth			
Pecans	Black	Pecan nut			
	marginated	case-			
	aphid	bearer			
	Fall webworm	Pecan spittlebug	4 to 10	0	
	Hickory shuck	Pecan weevil			
	worm	Twig girdler			
	Lesser web-	Walnut			
	worm	caterpillar			
	Pecan leaf phylloxera				

intervals

Fruit & Nut Crops continued

CROP	INSECT		PRE HARVEST		SPECIFIC DIRECTIONS
			TEASPOONSFUL/ GALLON	INTERVAL (DAYS)	
Walnut	Calico scale	Filbertworm worm	2	0	For coding moth apply spray when average cross sectional diameters of developing nuts are 1/2 to 3/4 inch. Repeat during middle or late June as needed.
	Coding moth	Fruittree leafroller			
	European fruit lecanium	Frosted scale			
	European earwig		8		Spray tree trunks to point of run-off.

TREES AND ORNAMENTALS

For dilute spray applications to trees (including shade trees, shelter belts, plantations, parks and recreational areas), ornamentals, woody plants and shrubs, apply the specified dosage per gallon of water in sufficient spray volume to provide thorough coverage. (six teaspoons equal one fluid ounce).

SITE	INSECT	SPECIFIC DIRECTIONS
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GROUND APPLICATION	Ants	Fall armyworm	Oakworm	Springtails	Use 4 teaspoons of this product per gallon of water. Observe plant response precautions.
	Apple aphid	Flea beetles	complex	Spruce bud-worm	
Trees (including shade trees, shelter belts, plantations, parks and recreational areas)	Armyworm	Fuller rose beetle	Oleander caterpillar	Spruce needle-miner	Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Azalea leaf-miner	Gall midges	Olive ash borer	Subtropical pine tip moth	
Ornamentals (including roses and other herbaceous plants)	Bagworms	Gall wasps	Orange-striped oakworm	Tent caterpillar	Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Birch leaf-miner	Grasshoppers	Orange-striped oakworm	Thrips (exposed)	
Woody Plants and Shrubs	Blister beetle	Gypsy moth	Orange tortrix	Ticks	Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Boxelder leafminer	Hackberry nippegall maker	Periodical cicada	Tree hoppers	
	Browntail moth	Holly budmoth	Pine sawfly	Walnut caterpillar	Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Canker-worms	Holly leaf-miner	Pine spittlebug	Webworms	
	Catalpa sphinx	Holly leaf-miner	Pitch pine tip moth	hemlock looper	Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Chiggers	Jackpine budworm	Plant bugs	Western spruce budworm	
	Cooley spruce gall adelgid	Japanese beetle	Poinsettia hornworm	Willow leaf beetles	Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Cutworms	Jeffrey pine needleminer	Pysllids	Yellow poplar weevil	
	Cypress tip moth	June beetles	Puss caterpillar		Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Douglas-fir tussock moth	Lace bugs	Redhumped oakworm		
	Eastern spruce gall adelgid	Leafhoppers	Rose aphid		Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
	Elm leaf aphid	Leafrollers	Rose chafer		
	Elm leaf beetle	Locust borer	Roseslug		Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
		Maple leafcutter	Saddled prominent Sawflies (exposed)		
		Mealybugs	Scale insects		Apply dilute sprays to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage. For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.
		Mimosa webworm	Sowbugs		
		Nantucket pine tip moth	Sply elm caterpillar		

Trees & Ornamentals (continued)

SITE

INSECT

SPECIFIC DIRECTIONS

Elm span-worm
 Oak Leafminers
 Oak Leaf skeletonizer
 Eriophyid mites
 European pine shoot moth

Ips

Lps engraver beetles
 Roundheaded pine beetle
 Mountain pine beetle

Use 13.3 fluid ounces of this product per gallon of water. Effective as preventative treatment only. Repeat annually as required to prevent beetle attacks. Apply 1 gallon of spray per 50 sq. ft. of bark in late May to early July or prior to beetle attack. Treat tree trunks from ground level up until trunk diameter is less than 5 inches.

Turf grasses

Ants
 Armyworm
 Centipedes
 Chiggers
 Earwigs
 Essex skipper
 European chafer
 Fall armyworm
 Fiery skipper
 Grasshoppers
 June beetles

Leafhoppers
 Lucerne moth
 Millipedes
 Mosquitoes (adults)
 Sod webworm (lawn moths)
 Sowbugs
 Springtails
 Ticks
 White grubs
 Yellow striped armyworm

Use 3 to 6 fl. oz of this product per 1000 square feet (4 to 8 qts. per acre) of turf grass. Make application in sufficient spray volume for thorough coverage and turf thatch penetration. Repeat as necessary.

For Armyworm, Cutworm, and Fall Armyworm Control: Do not irrigate treated areas following insecticide application.

Chinch bugs
 Sod webworm (lawn moths)

Use 8.8 to 12 fl. ozs. of this product per 1000 sq. ft. (12 to 16 qts. per acre) of turf grass. Make application in sufficient spray volume for thorough coverage and turf thatch penetration. Repeat as necessary.

For Chinch Bug Control: Treat entire area rather than just damaged areas. Irrigation of turf grass areas before insecticide application will aid in penetration into turf grass.

For Sod Webworm Control: Do not irrigate treated areas following insecticide application.

Bluegrass billbug
 European crane fly
 Fleas

White grubs (such as: Japanese beetle, Chafer beetle and Phyllophaga spp. larvae)

a

Use 12 fl. ozs. of this product per 1000 sq. ft. (16 qts. per acre) of turfgrass. Make application in sufficient spray volume for thorough coverage and turf thatch penetration. Repeat as necessary.

For European Crane Fly Control: Treatments should be applied in early spring, April 1 to April 15, or as recommended by local Agricultural Extension Service agents. Water or irrigate turf grasses thoroughly soon after treatment.

For White Grub Control: Applications should be made when grubs are feeding near the soil surface usually during late March through May, or July to early September, or as recommended by local Agricultural Extension Service agents. Water or irrigate turf grasses thoroughly soon after treatment.

LAWNS AND RECREATIONAL AREAS
FOR USE IN CALIFORNIA

SITE	INSECT	SPECIFIC DIRECTIONS
Turf grasses	Ants	<p>Use 12 fl. oz. of this product per 1000 square feet (16 quarts per acre) of turf grass. Make application in sufficient spray volume for thorough coverage and turf thatch penetration. Repeat as necessary.</p> <p>For Armyworm, Cutworm, and Fall Armyworm Control: Do not irrigate treated areas following insecticide application.</p> <p>For Chinch Bug Control: Treat entire turf grass area rather than just damaged areas. Irrigation of turf grass area before insecticide application will aid in penetration into turf grass.</p> <p>For White Grub Control: Applications should be made when grubs are feeding near the soil surface, usually during late March through May, or July to early September or as recommended by local Agricultural Extension Service agents. Water or irrigate turf grasses thoroughly soon after treatments.</p>
	Armyworm	
	Bluegrass billbug	
	Centipedes	
	Chiggers	
	Chinch bugs	
	Cutworms	
	Earwigs	
	Essex skipper	
	European chafer	
	Fall armyworm	
	Fiery skipper	
	Fleas	
	Grasshoppers	
	Leafhoppers	
	Lucerne moth	
	Millipedes	
	Mosquitoes	
	Sod webworm (lawn moths)	
	Sowbugs	
	Springtails	
	Ticks	
	White grubs	
	Yellowstriped armyworm	

IMPORTED FIRE ANT CONTROL

For use as a mound treatment to control imported fire ants, apply the specified dosage directly to the mound.

SITE	TEASPOONSFUL/ GALLON	SPECIFIC DIRECTIONS
Lawns, Cemeteries and Recreational Areas (including turf, golf courses, and parks), Pastures, Rangeland, Forested lands, and Wasteland	6 teaspoonsful/Gallon (1 fl. oz./gal.)	<p>DO NOT ALLOW PUBLIC USE OF TREATED AREAS DURING APPLICATIONS OR UNTIL SPRAYS HAVE DRIED.</p> <p>Apply a total of 2 gallons of the diluted solution over the surface of each mound or at least 1 quart per 6 inches of mound diameter using a bucket, can or other appropriate equipment. Thoroughly wet mound and surrounding area to a 4 ft. diameter (12 sq. ft.). Do not disturb mounds prior to treatment. Pour solution from a height of about 3 ft. to give sufficient force to break mound apex and flow into ant tunnels. For best result, apply in cool weather, 65 to 80°F, or in early morning or late evening hours. Repeat application if mound activity resumes after 10 days. Treat new mounds as they appear. Pressurized sprays may disturb the ants and cause migration, reducing product effectiveness.</p> <p>1 Tablespoon = 1/2 fluid ounce of product</p>

CONTROL OF TICKS WHICH TRANSMIT LYME DISEASE

SITE	SPECIFIC DIRECTIONS
Lawns and Lawns and Recreational Turfgrass (Including: Lawns & Perimeters, Golf Courses, Sports Fields, Cemeteries, Parks, and Pastures) Shrubs, Ornamentals, Wooded Areas (Including: Military Posts, Logging camps, and Campsites) Wastelands	For control of juvenile and adult Ixodes spp. ticks (Deer tick, Bear tick, and Black legged tick) and Amblyomma spp. ticks (Lone Star tick) apply at the rate of 2 tablespoons (1 fluid ounce) per gallon of water. Begin applications in late spring or early summer (May/June). Thoroughly treat entire turf area, shrub beds, ornamental plantings, wooded areas, and around outside perimeters of homes/buildings where exposure to ticks may occur. Retreat at 3 to 4 week intervals since ticks may be reintroduced from surrounding areas by animals.

ADULT MOSQUITO CONTROL

SITE	SPECIFIC DIRECTIONS
Parks and Recreational Areas	CAUTION: May kill shrimp and crabs. Do not use in areas where these are important resources. OBSERVE BEE CAUTION. Avoid direct application. For dilute-spray ground applications to trees (including shade trees, shelter belts, plantations, parks and recreational areas), ornamentals, woody plants and shrubs, apply 1 to 2 tablespoons of this insecticide per gallon of water. Treat shrubbery and areas where adult mosquitoes congregate. Treat when adult mosquitoes are active in early morning or late evening. Repeat at 7 to 10 day intervals. For residual control in subtropical regions use 16 fluid ounces of this product per gallon of water and apply 4 gallons of prepared spray per 2000 square feet of surface area. Repeat in 3 to 6 months or when necessary.

PEST CONTROL IN AND AROUND BUILDINGS

Dosages refer to ounces of product per gallon of water

INSECT	OUNCES/GALLON	SPECIFIC DIRECTIONS
Brown dog tick Earwigs, Fleas Millipedes Silverfish	7 ounces/gal.	For use in and around buildings such as homes, apartments, warehouses, barns and municipal and recreational areas. Apply as coarse wet spray or with a paint brush to outdoor sleeping quarters of pets, outside perimeter of dwellings and other areas where insects tend to congregate.
Ants Cockroaches	17 ounces/gal.	Do not use this product in commercial food areas of food handling establishments, restaurants, or other places where food is prepared or processed. Avoid application to surfaces where visible spray residues are objectionable

POULTRY INSECT CONTROL

POULTRY	INSECT	SPECIFIC DIRECTIONS
Chickens	Chicken mite	For use as a direct spray on birds by: 1. Misting with Electric Fog Machine: Mix 20 ounces of product in 1 gallon of spray. Use 1½ gallon per 1000 hens in cages, on litter or on slatted floor. Repeat in 4 weeks if necessary.
Ducks	Fleas	
Geese	Lice	
Gamebirds	Northern fowl mite	
Pigeons		
Turkeys		

OR

2. **Spraying with knapsack or cylinder type compressed air sprayers:** Mix 12 ounces of this product in 5 gallons of spray. Use 1 gallon per 100 hens in cages, on litter or on slatted floor. Repeat in 4 weeks if necessary.

Direct mist spray for chicken mite and fleas as a supplement to spraying insects and buildings for control of these pests. Do not apply to poultry and game birds within 7 days of slaughter.

POULTRY ROOSTS AND BUILDING ONLY

POULTRY QUARTERS	AMOUNT/GALLON	SPECIFIC DIRECTIONS
Bed bugs	5 tablespoons/gal.	Apply 12 to 25 ounces of spray mixture per 100 square feet of wall, litter or roost surface. Force spray into cracks. Repeat as needed.
Chicken mites		
Fleas		
Lice		
Northern fowl mite		
Fowl tick	10 ounces/gal.	Ventilate while spraying. Do not treat premises within 7 days of slaughter.
Lesser mealworms	33 ounces/gal.	Apply 25 ounces of spray mixture per 100 square feet of floor space or litter surface. Repeat as needed.
		Ventilate while spraying. Do not treat premises within 7 days of slaughter

STORAGE AND DISPOSAL

STORAGE: Store unused product in original container only, in cool, dry area out of reach of children and animals, preferably in a locked storage area. Do not store in areas where temperatures frequently exceed 100°F.

After use, replace cap on insecticide container. Rinse hose end unit outdoors in clear water. Store insecticide and sprayer assembly in a cool place.

PESTICIDE DISPOSAL: Partially filled containers may be disposed of by securely wrapping original container in several layers of newspaper and discarding in trash. Do not contaminate water, food, or feed by storage or disposal. Discard unused pesticide spray mixture in a safe place away from water supplies.

CONTAINER DISPOSAL: Do not reuse empty container. Do not reuse hose and sprayer assembly for other purposes. Rinse thoroughly before discarding in trash. Securely wrap both in several layers of newspaper and discard in trash.

NOTE OF DISCLAIMER

NOTICE: Buyer shall be solely responsible for any and all injury, loss or damage which results from the use of this product in any manner which is inconsistent with the label directions, warnings or cautions.

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