



CARBARYL 4L

Carbaryl Insecticide

ACCEPTED
WITH COMMENTS
In EPA Letter Dated:

DEC 27 1982

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
25 U.S.C. 135, for the purpose of
registration under FIFRA Section 24(c),
this product is being registered.

19713-49

ACTIVE INGREDIENTS:

Carbaryl (1-naphthylmethylcarbamate)	43.4%
INERT INGREDIENTS:	56.6%
TOTAL	100.0%

Product contains 4 pounds carbaryl as active ingredient.

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Induce vomiting by placing finger on back of throat.
Call a Physician. Never give anything by mouth to an unconscious person.
IF ON SKIN: Remove contaminated clothing and wash skin with soap and
plenty of water. If irritation develops get medical attention.
IF IN EYES: Immediately flush eyes with plenty of water for at least
15 minutes. If irritation develops get medical attention.
NOTE TO PHYSICIAN: Carbaryl is a moderate, reversible cholinesterase
inhibitor. Atropine is antidotal. Do Not Use 2-PAM, opiates or
cholinesterase inhibiting drugs.

EPA Reg. No. 19713-
EPA Est. No. 19713-MS-1

NET CONTENTS:

Manufactured by: Drexel Chemical Company
P.O. Box 9306
Memphis, Tenn. 38109

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

HARMFUL IF SWALLOWED. Avoid Breathing of Spray. Do Not Take Internally. Avoid Contact with Skin and Eyes. Wear regular long-sleeved work clothing. Change to clean clothing daily. Wash hands and face before eating. Wash thoroughly after handling.

Environmental Hazards

Avoid application to lakes, streams and ponds. Do not apply when weather conditions favor drift from areas treated. May kill shrimp and crab. Do not apply where these are important resources. Do not contaminate water by cleaning equipment or disposal of wastes.

BEE CAUTION - May kill honeybees in substantial numbers. This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your Cooperative Extension Service. Do not use when the value of honeybees as pollinators is more important than insect control. Before applying warn beekeepers to locate hives beyond bee flight range until one week after application or to take other equally effective precautions.

GENERAL INFORMATION

Carbaryl 4L is a suspension of microfine carbaryl insecticide in an aqueous medium. It readily disperses in water to form a spray which, when applied by air or ground equipment, resists erosion by rainfall or overhead irrigation. The directions on this label are based on tests and field experience relating to (a) effectiveness, (b) possible injury to plants and (c) residues in food, feed and milk. READ THIS LABEL BEFORE USE. STRICTLY OBSERVE LABEL DIRECTIONS AND CAUTIONS AND APPLICABLE FEDERAL AND STATE REGULATIONS.

Treated areas may be re-entered immediately after the spray has dried.

PRE-HARVEST AND GRAZING USE INFORMATION AND LIMITATIONS

Tolerances established under the Federal Food, Drug and Cosmetic Act permit the sale of crops bearing probable carbaryl residues when this product is used in accordance with label directions. If used as directed, treated forage may be grazed or used as feed for dairy and meat animals without causing illegal residues in meat or milk. This product may be applied up to and including the day of grazing of forage crops. Application may be made without removing livestock from area being treated. Do not plant rotational crops not listed on this product label within 18 months following treatment.

PLANT RESPONSE PRECAUTIONS

To avoid possible injury to tender foliage, do not apply to wet foliage or when rain or high humidity is expected during the next two days. Carbaryl injures Boston Ivy, Virginia creeper and maidenhair fern. During early season, it may also injure Virginia and sand pines. Observe label instructions on apple thinning and on combinations with certain herbicides on rice and soybeans.

SPRAY PREPARATION

TO ASSURE A UNIFORM PRODUCT, AGITATE, STIR OR RECIRCULATE ALL CARBARYL 4L CONTAINERS PRIOR TO USE. Remove oil, rust, scale, pesticide residues and other foreign matter from mix tanks and entire spray system. Flush with clean water. Fill spray or mix tank with $\frac{1}{2}$ to $\frac{3}{4}$ the desired amount of water. Start mechanical or hydraulic agitation. Slowly add the required amount of Carbaryl 4L and then the remaining volume of water. Include rinse water from container. Dilution of 1 volume of Carbaryl 4L with 1 volume of water will allow maximum resistance to wash off by rainfall or overhead irrigation. Dilutions higher than 1:11 are not recommended where residual insect control from wash off resistance is desired. Prepare only as much spray mixture as can be applied on the day of mixing. MAINTAIN CONTINUOUS AGITATION DURING MIXING AND APPLICATION TO ASSURE A UNIFORM SUSPENSION. DO NOT STORE SPRAY MIXTURES FOR PROLONGED PERIODS.

Carbaryl 4L Spray must be diluted as stated above, and droplets must dry on the foliage before they become washoff resistant. When atmospheric humidity is low, a drying time of at least one hour is generally adequate. Under high humidity a longer drying time may be required. Washoff resistance can not be expected if Carbaryl 4L is applied to wet foliage which does not dry adequately prior to rainfall or overhead irrigation.

On all crops use sufficient spray volume to obtain thorough coverage. Optimum pest control under certain crops, pest or climatic conditions may require spray gallonages higher than the 1:11 dilution. For example in hot, dry weather, or when humidity is low, higher spray gallonage per acre may be required to minimize loss from evaporation and insure thorough coverage. The total spray volume required for effective pest control can be determined by previous experience, pest and crop conditions and local recommendations.

COMPATIBILITY

Carbaryl 4L, when diluted with an equal volume of water, is compatible with a wide range of pesticides. It is not compatible with diesel fuel, kerosene, fuel oil or aromatic solvents. If compatibility of Carbaryl 4L with another product and the resulting crop response is unknown, it should be tested on a small scale. Curdling, precipitation, greasing, layer formation or increased viscosity are symptoms of incompatibility. WHEN PREPARING COMBINATION SPRAYS, FIRST ADD CARBARYL 4L TO AT LEAST AN EQUAL VOLUME OF WATER, MIX THOROUGHLY, AND THEN ADD COMBINATION PRODUCTS TO THE MIXTURE. DO NOT APPLY TANK MIX COMBINATIONS UNLESS YOUR PREVIOUS

EXPERIENCE INDICATES THE MIXTURE IS EFFECTIVE AND WILL NOT RESULT IN APPLICATION PROBLEMS, EXCESSIVE RESIDUES OR PLANT INJURY.

Unstable under highly alkaline conditions. Not effective if used with alkaline material such as Bordeaux, lime-sulfur and casein lime spreaders.

APPLICATION

On all crops, use sufficient gallonage to obtain thorough and uniform coverage. Calibrate spray equipment to deliver the required amount. The flow rate of Carbaryl 4L diluted 1:1 with water is similar to water. Use 50 mesh slotted strainers in spray system and behind nozzles. To clean spray system after use, drain and flush with water.

DIRECTIONS FOR USE

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

Read entire label. Use strictly according to label directions and cautions. Do not use application methods, dosages, concentrations, or frequencies not listed on labeling. Do not apply against target pests or crops not listed on labeling. Do not mix with fertilizers or micronutrients if the resulting spray mixture is incompatible or alkaline.

INSECT CONTROL

Apply when insects or their damage appears. To maintain control repeat at 7 to 14 day intervals or as necessary unless a shorter interval is specified below. Where a dosage range is indicated, use lower rate on young plants and early instars and higher rate on mature plants, advanced instars and adults. Thorough and uniform spray coverage is essential for effective control. Carbaryl 4L does not control spider mites. If spider mites are a problem, use a registered miticide. Regional differences have been noted in the susceptibility of certain strains of fall armyworm to Carbaryl 4L. If local experience indicates inadequate control.

FORAGE, FIELD AND VEGETABLE CROPS

Apply in sufficient spray volume to obtain thorough coverage. Where maximum wash off resistance is needed, use up to 1:1 (vol/vol) dilution with water. Do not dilute greater than 1:11 where wash off resistance is desired. To prepare small volumes of spray, use 1 tablespoonful ($\frac{1}{2}$ fluid ounce) of Carbaryl 4L per gallon of water where rates of 1 quart per acre or 1 quart per 100 gallons are indicated in the table below.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
All Forage, Field and Vegetable Crops in This Section	Grasshoppers	$\frac{1}{2}$ to $1\frac{1}{2}$	See specific Forage, Field or Vegetable Crop	Use $\frac{1}{2}$ to 1 quart for nymphs on small plants or sparse vegeta- tion in wastelands, rangeland, ditch banks and borders. Use 1 to $1\frac{1}{2}$ quarts for adult grass- hoppers or applications to dense vegetation.
Alfalfa Clovers	Blister beetles Mexican bean beetle	$\frac{1}{2}$ to 1	0	Observe plant response precau- tions. For alfalfa weevil larvae, if pretreatment damage is extensive, cut alfalfa and treat the stubble. Use higher rate in areas east of the Rocky Mountains. On dense growth use 25 to 40 gallons per acre with ground equipment to ensure adequate coverage.
	Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Green cloverworm, Japanese beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Velvetbean caterpillar	1 1		
	Alfalfa Weevil larvae, Army- worm, Cloverhead weevil, Corn earworm, Cutworms, Egyptian alfalfa weevil larvae, Essex skipper, European alfalfa beetle, Fall armyworm, Lygus bugs, Stink bugs, Webworms, Yellow-striped armyworm	1 to $1\frac{1}{2}$		
Asparagus	Asparagus beetle	1 to 2	1	Treat ferns or brush growth. Do not treat more than once every 3 days
	Apache cicada Asparagus beetle	2 to 4	Post harvest application only.	

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Beans (including blackeyed peas, cowpeas, crowder or southern peas, dry beans, green beans, lima beans, navy beans and snap beans)	Blister beetles Mexican bean beetle	$\frac{1}{2}$ to 1	0	Observe plant response precautions.
	Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Flea beetles, Green cloverworm, Japanese beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Velvetbean caterpillar, Western bean cutworm	1		
	Armyworm, Corn earworm, Cutworms, European corn borer, Fall armyworm, Stink bugs, Tarnished plant bug, Webworms	1 to $1\frac{1}{2}$		
	Cowpea Curculio	2		
	Corn earworm, Lima bean pod borer, Lygus bugs, Stink bugs	2		CALIFORNIA ONLY
Cabbage Broccoli Brussels Sprout Cauliflower Kohlrabi	Flea beetles, Harlequin bug	$\frac{1}{2}$ to 1	3	
	Armyworm, Corn earworm, Fall armyworm, Imported cabbage-worm	1 to 2		

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Chinese cabbage Collards Hanover salad Horseradish Kale Mustard greens Radishes Rutabagas Turnips	Flea beetles, Harlequin bug, Leafhopper	$\frac{1}{2}$ to 1	3 (horseradish, radishes, ruta- bagas and turnip roots)	
	Aster leafhopper	1 to $1\frac{1}{2}$	14 (Chinese cabbage collards, Hano- ver salad, kale, mustard greens, and turnip tops)	
	Armyworm, Corn earworm, Fall armyworm, Imported cabbageworm Stink bugs, Tarnished plant bug	1 to 2		
Carrots, Celery, Paranips, Parsley	Flea beetles, Leafhoppers	$\frac{1}{2}$ to 1	0 (carrots)	Treat on a 5 to 7 day schedule.
	Aster leafhopper, Lygus bugs, Spittlebugs	1 to $1\frac{1}{2}$	14 (celery) 3 (paranips)	
	Armyworm, Corn earworm, Fall armyworm, Stink bugs, Tarnished plant bug	1 to 2	14 (parsley)	
Corn (field, sweet, pop)	Armyworm, Corn earworm, Corn rootworm adults, Chinchbugs, European corn borer, Fall armyworm, Flea beetles, Japanese beetle, Sap beetles, Southwestern corn borer, Leafhoppers	1 to 2	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. For optimum chinch bug control, apply 20 gallons of water per acre by ground and direct spray toward stalk to provide thorough coverage.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Corn-continued	Western bean cutworm	2	0	Treat when infestation averages 15% and at 90% to 100% tassel emergence. Treatment after 100% silk emergence will reduce effectiveness.
	Cutworms	2 to 6½	0	Apply in a 12 inch band, using 6 fluid ounces per 1000 linear feet of row, in at least 15 gallons of water per acre. For broadcast application use 6.5 quarts in at least 20 gallons (ground) or 5 gallons (air) of water per acre.
Cotton	Cotton fleahopper, Cotton leafworm, Flea beetles, Striped blister beetle, Thrips	½ to 1	0	Early season insect control.
	Boll weevil, Bollworms, Cotton leafperforator, Fall armyworm, Leafrollers, Leafhoppers, Tarnished plant bug, Yellow striped armyworm (cotton cutworm)	1 to 2	0	Treat on a 5 to 7 day schedule for as long as control is necessary. Mid and late season insect control. May be applied after bolls open.
	Lygus bugs	1 to 2	0	For light to moderate population in Western irrigated cotton.
	Pink bollworm	1½ to 2½	0	Aphid populations will be suppressed by repeated applications of this insecticide.
	Stink bugs, Saltmarsh caterpillar	2		

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Cucumber Melons Pumpkin Squash	Pickleworm, Melonworm	$\frac{1}{2}$ to 1	0	Observe plant response precautions. Avoid excessive applications.
	Cucumber beetles, Flea beetles, Leafhoppers, Squash bugs	1		
Dandelion Endive (Escarole) Lettuce Salsify	Flea beetles, Harlequin bug, Leafhoppers	$\frac{1}{2}$ to 1	3 (head lettuce & salsify roots)	Observe plant response precautions. Treat on a 5 to 7 day schedule after heads begin to form.
	Aster leafhopper, Lygus bugs, Spittlebugs	1 to $1\frac{1}{2}$	14 (dandelion, endive (escarole) leaf lettuce & salsify tops)	
	Armyworm, Corn earworm, Fall armyworm, Imported cabbage- worm, Stink bugs, Tarnished plant bug	1 to 2		
Forage Grasses Pasture Rangeland	Armyworm, Black grass bugs, Chinch bugs, Essex skipper, Fall armyworm, Range cater- pillars, Range crane fly, Striped grass looper, Thrips	1 to $1\frac{1}{2}$	0	To control thrips in grasses grown for seed use high spray pressure to improve penetration into boot.
	White grubs (green June beetle)	$1\frac{1}{2}$ to 2		
Garden beet Spinach Swiss chard	Flea beetles, Harlequin bug, Leafhoppers	$\frac{1}{2}$ to 1	3 (garden beet roots)	Treat on a 5 to 7 day schedule.
	Aster leafhopper	1 to $1\frac{1}{2}$	14 (garden beet tops, Spinach, Swiss chard)	
	Armyworm, Corn earworm, Fall armyworm, Stink bug, Tarnished plant bug	1 to 2		

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Okra	Corn earworm, Stink bugs	1 to 2	0	Treat on a 5 to 7 day schedule.
Peanuts	Blister beetles, Mexican bean beetle	$\frac{1}{2}$ to 1	0	Observe plant response precautions.
	Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Green cloverworm, Japanese beetle, Leafhoppers, Red-necked peanut-worm, Three cornered alfalfa hopper, Thrips, Velvetbean caterpillar	1		
	Armyworm, Corn earworm, Fall armyworm, Stink bugs, Webworms	2		
Peas	Colorado potato beetle, Leafhoppers	1	0	
	Armyworms	1 to $1\frac{1}{2}$		
	Alfalfa caterpillar, Cutworms, Pea Leaf weevil, Pea weevil, Yellow striped armyworm	$1\frac{1}{2}$		
	Alfalfa looper	$2\frac{1}{2}$	0	WASHINGTON STATE ONLY

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Potato Tomato Eggplant Pepper	Colorado potato beetle, Flea beetles, Leafhoppers	$\frac{1}{2}$ to 1	0	
	European corn borer, Fall armyworm, Lace bugs, Stink bugs, Tarnished plant bug, Tomato fruitworm, Tomato hornworm, Tomato pinworm	1 to 2		
	Cutworms	2		
Rice	Armyworm, Chinch bugs, Fall armyworm, stink bugs	1 to $1\frac{1}{2}$	14	DO NOT APPLY PROPANIL HERBICIDE WITHIN 15 DAYS BEFORE OR AFTER CARBARYL 4L APPLICATION OR PLANT INJURY WILL RESULT. MISSISSIPPI DELTA & TEXAS.
	Armyworm, Leafhoppers, Tadpole shrimp	2	14	CALIFORNIA ONLY. For optimum tadpole shrimp control apply to water when pest first appears.
Soybeans	Bean leaf beetle, Cucumber beetles, Green cloverworm, Mexican bean beetle, Velvet-bean caterpillar	$\frac{1}{2}$	0	DO NOT APPLY A COMBINATION OF CARBARYL 4L AND 2,4-DB HERBICIDES TO SOYBEANS. For light to moderate populations. To control heavy infestations use higher rate.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Soybeans - cont.	Corn earworm	$\frac{1}{2}$ to $\frac{3}{4}$	0	
	Blister beetles, Grape colaspis, Mexican bean beetle	$\frac{1}{2}$ to 1		
	Alfalfa caterpillar, Bean leaf beetle, Cucumber beetles, Green cloverworm, Japanese beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Velvetbean caterpillar	1		
	Armyworm, Corn earworm, Cutworms, Fall armyworms, Stink bugs, Webworms	1 to $1\frac{1}{2}$		
	Painted lady (Thistle caterpillar), Saltmarsh caterpillar, Yellow striped armyworm	2 to $2\frac{1}{2}$		
Sugar beets	Armyworm, Beet leaf beetle, Fall armyworm, Flea beetles, Leafhoppers, Webworms	1 to $1\frac{1}{2}$	14	
	Cutworms	$1\frac{1}{2}$		

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Sunflower	Cutworms	1½	60	
	Armyworm, Fall armyworm	1½ to 2		
	Stem weevil, Sunflower beetle	1 to 2		
Sweet potato	Corn earworm, Cucumber beetle, Flea beetles, Sweet potato hornworm, Tortoise beetles	1 to 2	0	<p>Apply as a foliar spray as needed.</p> <p>FOLIAR APPLICATION - Full coverage of plants is essential. Use lower rate on young plants and higher rate on mature plants.</p>
	Yellowstriped armyworm	2		
	Sweet potato weevil	1 to 2		
Tobacco	Tobacco flea beetle	2 Tbs/gal or 1 qt/50 gal or 5 gal/100 sq. yards	0	IN PLANT BEDS - To prevent injury, avoid excessive applications.
	Green June beetle grubs	½ qt/100 gals		Apply only to areas that larvae have uprooted by sprinkling as a drench with 50 to 100 gallons per 100 square yards.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Tobacco - cont.	Budworms, Fall armyworms, Flea beetles, Hornworms, Japanese beetle, June beetle, Suckfly	1 to 2		IN FIELDS - Use lower rate on young plants (up to knee height). Use at least 10 gallons of prepared spray per acre. Begin treatments when worms are small. If late season applications are necessary, allow three days before pruning or cutting.
Wheat	Cereal leaf beetle	1	21 (grain)	Application is effective against eggs, larvae and adults.
	Armyworm, Fall armyworm	1 to 1½		

TREE FRUIT AND NUT CROPS

For dilute sprays apply the specified dosage per 100 gallons of water. For concentrate and aerial sprays increase the concentration of CARBARYL 4L in the spray mixture to apply an amount per acre equivalent to that in a dilute spray. The optimum spray gallonage will depend on tree size, density and stage of growth. Typical spray gallonages per acre range from 200-300 gallons for dilute sprays, 30-100 gallons for concentrate sprays and 10-25 gallons for aerial sprays. Do not exceed maximum label rate per acre per application.

CROP	QUARTS OF CARBARYL 4L/100 GAL	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
APPLE THINNING			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 flavor, excessive fruit thinning with CARBARYL 4L, exercise caution to avoid possible yield reduction.
Apples only	$\frac{1}{4}$ to $\frac{1}{2}$	1	For easily thinned varieties including Cortland, Grimes, Jonathan, McIntosh, Orleans, Rome Beauty, Puritan, Red Delicious, Winesap, Yellow Newton.
	$\frac{1}{2}$ to 1	1	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.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Almond	Peach twig borer, San Jose scale, Fruittree leafroller	1	28	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.
	Navel orangeworm			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. Do not apply more than 5 quarts per acre.
Apples Pears	Apple aphid, Apple rus mite, Apple sucker, Bagworms, Calif. pearslug (pear sawfly), Codling moth, Eyespotted bud moth, Green fruitworm, Lecanium scales, Lesser apple-worm, Lygus bugs, Orange tortrix, Oystershell scale, Pear leaf blister mite, Pear psylla, Pear rust mite, San Jose scale, Tentiform leaf-miners, Woolly apple aphid	3/4 to 1	1	WEST OF THE ROCKY MOUNTAINS To avoid undesired apple thinning, delay use until at least 30 days after full bloom. For psylla control apply when eggs hatch or young nymphs are present.
	Apple mealybug, Apple aphid, Codling moth, White apple leafhopper	1/2		EAST OF THE ROCKY MOUNTAINS To avoid undesired apple thinning, delay use until at least 30 days after full bloom.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Apples Pears - cont.	Apple maggot, Apple rust mite, Bagworms, Eastern tent caterpillar, European apple sawfly, Eyespotted bud moth, Forbes scale, Fruit tree leafroller, Green Fruitworm, Japanese beetle, Lecanium scales, Lesser appleworm, Oystershell scale, Pear psylla, Pear leaf blister mite, Pear scale, Periodical cicada, Pear curculio, Red-banded leafroller, Rosy apple aphid, San Jose scale, Tarnished plant bug, Tentiform leaf-miners, Woolly apple aphid, Yellowheaded fireworm	1	1	For optimum scale control apply when crawlers are present.
Chestnuts	Chestnut weevil	2 to 3	0	Make 4 applications at weekly intervals beginning in late July for adult chestnut weevil control. Last application should be made prior to shuck split.
Citrus Fruit (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)	1	5	Do not apply more than 20 quarts of CARBARYL 4L per acre per application. 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	3/4 to 1		

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Filbert	Filbert aphid, Filbert leaf-roller, Filbertworm	1	0	Apply when leafroller eggs are hatching. Repeat on first appearance of adult filbert moths and again 3 to 4 weeks later.
Olives	Olive scale	3/4 to 1	0	For optimum scale control add 1½ gals. of summer oil and apply mixture when crawlers are present. Do not exceed 2 applications per year. Do not apply more than 15 quarts of CARBARYL 4L per acre per application.
Peaches Apricots Nectarines	Apple pandemis, Codling moth, Cucumber beetles, European earwig, Fruittree leafroller, Japanese beetle, June beetles	1	1 (peaches)	Do not apply more than 6 quarts of CARBARYL 4L per acre per application to apricots.
	Lecanium scales, Lesser peach-tree borer, Olive scale, Orange tortrix, Oriental fruit moth, Peach twig borer, Periodical cicada, Plum curculio, Red-banded leafroller, San Jose scale, Tarnished plant bug, Tussock moth, Variegated leafroller	1	3 (apricots & nectarines)	For optimum scale control apply when crawlers are present. Spray limbs and trunks thoroughly, weekly during moth flight.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Pecans	Black margined aphid, Fall webworm, Hickory shuckworm, Lesser webworm, Pecan leaf phylloxera, Pecan nut case-bearer, Pecan spittle bug, Pecan weevil, Twig girdler, Walnut caterpillar	1 to 2½	0	Do not apply more than 7.2 quarts of CARBARYL 4L per acre per application.
Pistachios	Navel orangeworm	½ to 2	14	Apply dilute volumes of 150 to 300 gallons of mixed spray per acre for full coverage at onset of hull split.
Plums Prunes Cherries	Black cherry aphid, Brown soft scale, Cherry fruitworm, Cherry maggot, European earwig, Eye-spotted bud moth, Forbes scale, Fruit tree leafroller, Green fruitworm, Japanese beetle, Lecanium scales, Lesser peach-tree borer, Mealy plum aphid, Oystershell scale, Peach twig borer, Plum curculio, Prune leafhopper, Redbanded leaf-roller, Rose chafer, San Jose scale, Variegated leafroller	1	1	Do not apply more than 6 quarts of CARBARYL 4L per acre per application. For optimum scale control apply when crawlers are present. For lesser peachtree borer control, spray limbs and tree trunks thoroughly, weekly during moth flight.
	Codling moth, Eastern tent caterpillar, Orange tortrix, Tussock moth	¾		

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Walnut	Calico scale, European fruit lecanium, Filbertworm, Fruit tree leafroller, Frosted scale	½	0	Apply 5 quarts of CARBARYL 4L spray per acre for mature trees. For codling moth apply first spray when average cross-sectional diameters of developing nuts are ½ to ¾ inch. Repeat during middle or late June as needed.
	Codling moth	½		
	European earwig	1½ to 2		Spray tree trunks to point of run-off.
Recommended dosages refer to quarts of CARBARYL 4L per acre. The optimum spray gallonage will depend on plant size, density and stage of growth. Typical spray gallonages per acre range from 100-300 gallons for dilute sprays, 30-100 gallons for concentrate sprays and 10-25 gallons for aerial sprays. Do not exceed maximum label rate per acre per application.				
Blackberries, Raspberries, Dewberries (including boysenberries & loganberries)	European raspberry aphid, Japanese beetle, Leafhoppers, Leafrollers, Rose chafer, Snowy tree cricket	1 to 2	7	CALIFORNIA ONLY
	Omnivorous leafroller, Raspberry sawfly	2		
Blueberries	Blueberry maggot, Cherry fruitworm, Cranberry fruitworm, European fruit lecanium, Japanese beetle	1½	0	Apply 3 weeks before harvest and repeat as necessary.

CROP	INSECT	QUARTS OF CARBARYL 4L/ACRE	PRE-HARVEST INTERVAL (DAYS)	SPECIFIC DIRECTIONS
Cranberries	Cutworms, Cranberry fireworms, Cranberry fruitworms, Japanese beetle, Leafhopper, Rose chafer	1½ to 3	1	Apply in late bloom and as needed at 7 to 10 day intervals.
Grape	European fruit lecanium, Grape leaffolder, Grape leafhopper, Western grapeleaf skeletonizer, Western yellow-striped armyworm	1 to 2	0	Apply before first brood leaffolder larvae emerge from rolls.
	Cutworms, Eight-spotted forester, Grape berry moth, Japanese beetle, June beetle, Orange tortrix, Omnivorous leafroller, Redbanded leafroller, Saltmarsh caterpillar	2		
Strawberries	Flea beetles, Meadow spittlebug, Omnivorous leaf-tier (strawberry fruitworm), Strawberry leafroller, Strawberry weevil	1 to 2	1	CARBARYL 4L may injure Early Dawn and Sunrise varieties on the Delmarva Peninsula.

TREES AND ORNAMENTALS

For dilute spray ground applications to trees (including shade trees, shelter belts, forests, plantations, parks and recreational areas), ornamentals, woody plants and shrubs, apply the specified dosage per 100 gallons of water. For concentrate spray ground applications, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. To prepare small volumes of spray, use 1 tablespoon ($\frac{1}{2}$ fluid ounce) of CARBARYL 4L per gallon of water, where rates of 1 quart are indicated.

For aerial applications to forest trees (including shade trees, shelter belts, plantations, parks and recreational areas) and commercially grown ornamentals, woody plants and shrubs, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. Avoid direct application to lakes, streams and ponds.

CROPS	INSECTS	QT. OF CARBARYL 4L	SPECIFIC DIRECTIONS
GROUND APPLICATION: Trees (including shade trees, shelter belts, forest, planta- tions, parks and recreational areas) Ornamentals (including roses, flowers and other herbaceous plants), Woody plants and Shrubs.	Ants	1	Observe plant response pre-cautions. 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.
	Apple aphid		
	Armyworm		
	Azalea leafminer		
	Bagworms		
	Birch leafminer		
	Blister beetle		
	Boxelder bug		
	Boxwood leafminer		
	Brown tail moth		
	Cankerworms		
	Catalpa sphinx		
	Chiggers		
	Cooley spruce		
	gall aphid		
	Cutworms		
	Cypress tip moth		
	Douglas Fir		
	tussock moth		
	Eastern spruce		
	gall aphid		
	Elm leaf aphid		
	Elm leaf beetle		
	Elm sawworm		
	Eriophyid mites		
	European pine		
	shoot moth		
	Fall armyworm		
	Flea beetles		
	Fuller rose beetle		
	Gall midges		
	Gall wasps		
	Green striped mapleworm		
	Grasshoppers		
	Gypsy moth		
	Hackberry nipple		
	gall maker		
	Holly bud moth		
	Holly leafminer		
	Jackpine budworm		
	Japanese beetle		
	Jeffrey pine		
	needleminer		
	June beetles		
	Lace bugs		
	Leafhoppers		
	Leafrollers		
	Locust borer		
	Mealy bugs		
	Mimosa webworm		
	Nantucket pine		
	tip moth		
	Oak leafminers		
	Oak leaf skeletonizer		

CROP	INSECTS	QT. OF CARBARYL 4L	SPECIFIC DIRECTIONS
cont. AERIAL APPLICATION: Forest trees (including shade trees, shelter belts, forests, plantations, parks and recreational areas) and Commercially grown Ornamentals (including roses, flowers and other herbaceous plants), Woody Plants and Shrubs	Oakworm complex Sowbugs Orleander caterpillar Spiny elm caterpillar Olive ash borer Springtails Plant bugs Spruce budworm Orange striped Spruce Needleminer oakworm Subtropical pine tip moth Orange tortrix Tent caterpillars Periodical cicada Thorn bugs Pine sawfly Thrips (exposed) Pine spittle bug Ticks Pitch pine tip moth Walnut caterpillar Poinsettia hornworm Webworms Psyllids Western hemlock Puss caterpillar looper Redhumped oakworm Western spruce Rose aphid budworm Rose chafer Willow leaf Roseslug beetles Saddled prominent Yellow poplar Sawflies (exposed) weevil Scale insects	1	
	Ips engraver beetles Mountain pine beetle Rounded pine beetle Western pine beetle	20	Effective as a preventative treatment only. Repeat annually as required to prevent beetle attacks. Apply 1 gallon of spray per 50 square feet 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.
	Elm bark beetle		Apply approximately 20-30 gallons of spray mixture for each 50 feet of elm tree for thorough coverage of all bark surfaces on trunks, limbs and twigs.

LAWNS AND RECREATIONAL AREAS

CROP	INSECT	SPECIFIC DIRECTIONS
Lawns and Recreational Areas (including turf, golf courses, and parks)	Ants, Armyworm, Bluegrass billbug, Centipedes, Chiggers, Cutworms, Earwigs, Essex skipper, European chaffer, Fall armyworm, Fiery skipper, Fleas, Grasshoppers, June beetles, Leafhoppers, Lucerne moth, Millipedes, Mosquitoes, Sod webworm (lawn moths), Sowbugs, Springtails, Ticks, Yellow striped armyworm	Use 1 quart of CARBARYL 4L in 150 to 200 gallons of spray mixture per 5,000 square feet of established lawn, recreational area, roadway or path border. For best results, mow lawn and apply after wetting or rain to insure good penetration of turf. Garden hose or pressure applications may be used. Repeat 2 or 3 weeks later if necessary.
	Chinch bugs, White grubs	Use 1½ quarts of CARBARYL 4L in 150 to 200 gallons of spray per 5,000 square feet.

MOSQUITO CONTROL

For dilute spray ground applications to trees (including shade trees, shelter belts, forests plantations, parks and recreational areas), ornamentals, woody plants and shrubs, apply the specified dosage per 100 gallons of water. For concentrate spray ground applications, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. To prepare small volumes of spray, use 1 tablespoon (½ fluid ounce) of CARBARYL 4L per gallon of water, where rates of 1 quart are indicated.

For aerial applications to forest trees (including shade trees, shelter belts, plantations, parks and recreational areas) and commercially grown ornamentals, woody plants and shrubs, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. Avoid direct application to lakes, streams and ponds.

CROP	QTS. OF CARBARYL 4L	SPECIFIC DIRECTIONS
Pastures, Rangelands, Yards, Parks, Recreational Areas, Logging Camps, Military Posts & Adjacent Forested Lands or Wastelands	¼ to 1 (½ to 1 tablespoonful per gallon)	DO NOT USE WHERE SHRIMP AND CRABS ARE IMPORTANT RESOURCES. OBSERVE BEE CAUTION. Treat shrubbery and areas where adult mosquitoes congregate. Treat when adult mosquitoes are active in early mornings or late evening. Repeat at 7 to 10 day intervals. Use ¼ to ½ quart per 100 gallons in mistblowers, ½ to 1 quart per acre in aerial sprays and 1 quart per acre in low pressure ground sprayers.
	25	For residual control in subtropical regions apply 4 gallons of prepared spray per 2000 square feet of surface areas. Repeat in 3 to 6 months or when necessary.

PEST CONTROL AROUND BUILDINGS

Ants Cockroaches	20 (20 tablespoonfuls/gallon)	For external use around buildings only. Do not treat animals. Apply as a 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. Do not use where edible products are exposed, being prepared, processed or served. Avoid application to surfaces where visible spray residues are objectionable.
Brown dog tick Earwigs Fleas Millipedes Silverfish Spiders	10 (10 tablespoonfuls/gallon)	

POULTRY ROOSTS AND BUILDINGS ONLY

Bed bugs Chicken mite Fleas Lice Northern fowl mite	4	DO NOT TREAT POULTRY OR GAME BIRDS. Apply 1 to 2 gallons of spray mixture per 1000 square feet of wall, litter or roost surface. Force spray into cracks. Repeat as needed. Avoid contamination of nests, eggs and feeding and watering troughs. Ventilate while spraying. Do not treat premises within 7 days of slaughter.
Fowl tick	16	
Lesser mealworms	50	Apply 2 gallons of spray mixture per 1000 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**

Store unused Carbaryl 4L in original container only, in cool, dry area out of the reach of children and animals. Do not store in areas where temperatures frequently exceed 100°F.

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

Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State or local procedures under the Resource Conservation and Recovery Act.

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other approved state and local procedures.

WARRANTY - CONDITION OF SALE

OUR RECOMMENDATIONS FOR USE of this product are based upon tests believed reliable. Follow directions carefully. Timing and method of application, weather and crop conditions, mixtures with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. Buyer assumes all risks of use, storage and handling of this material not in strict accordance with directions given herewith.

In no case shall Drexel or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product when such use and/or handling is not in strict accordance with directions given herewith. The foregoing is a condition of sale by Drexel Chemical Company and is accepted as such by the Buyer.

DEC 27 1982

Ms. Les Shockey
Drexel Chemical Co.
P.O. Box 9306
Memphis, TN 38109

Dear Ms. Shockey:

Subject: Drexel Carbaryl 4 Flowable
EPA Registration No. 19713-49
Your Application Dated October 10, 1982

The amendment referred to above, submitted in connection with registration under FIFRA sec. 3(c)(7)(A), is acceptable 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.
2. Submit five (5) copies of your final printed labeling before you release the product for shipment.

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 yours,

Jay S. Ellenberger
Product Manager (12)
Insecticide-Rodenticide Branch
Registration Division (TS-767)

Enclosure

TS-767;Ellenberger:DCR-28990;WANG-1716C:hk;Raven:479-2013:12/20/82