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Product Data Sheet

Dursban 1-12

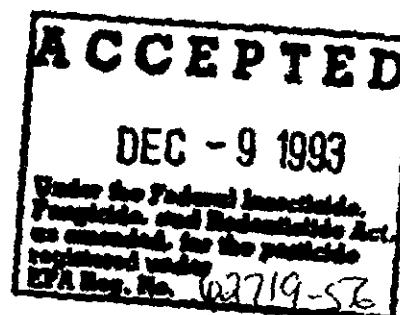
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(NOT FOR...)

(DURS-...)

Registrant:

DowElanco
9002 Purdue Rd. Quad IV
Indianapolis, IN 46268
Contact Person: Ms. Terry Fults
1/800-892-6740



EPA Approval 06/15/93

Revisions include:

- 1) Revised Precautionary Statements as per EPA conditions of acceptance in 6/15/93 cover letter.
- 2) Reformatted tables and corrected spelling errors.

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DowElanco

Dursban* 1-12 Insecticide

Controls numerous pests around homes and various pests injurious to trees, turf, ornamental plants and shrubs, and certain vegetables, fruits, and fruit and nut trees.

Active Ingredients:

chlorpyrifos: O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate.....	12.6%
Inert Ingredients	87.4%

(contains aliphatic and aromatic petroleum solvents)

Contains 1 pound of chlorpyrifos per gallon

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.

Notice: Read the entire label. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet. 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.

EPA Reg. No. 62719-56

EPA Est. 464-MI-1

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DowElanco • Indianapolis, Indiana 46268-1189, U.S.A.

Insecticide

Net Contents - _____

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Precautionary Statements

Hazards to Humans and Domestic Animals
Keep Out of Reach of Children

WARNING

Causes Substantial But Temporary Eye Irritation • Harmful If Swallowed

Do not get in eyes or on clothing. Wear eye protection when handling. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

First Aid:

If In Eyes: Hold eyelids open and flush with steady, gentle stream of water for 15 minutes. Get medical attention immediately.

If Swallowed: Call a physician or poison control center immediately. Drink promptly a large quantity of milk, egg white, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol. Contains aromatic solvent. Do not induce vomiting. Do not give anything by mouth to an unconscious person.

If On Skin: Immediately wash with plenty of soap and water. Get medical attention.

If Inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

Note to Physician: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. 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.

Environmental Hazards

This pesticide is toxic to birds, fish and aquatic invertebrates. Birds feeding in treated area may be killed. Clean up spilled product to reduce exposure to wildlife. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Physical or Chemical Hazards

Combustible. Do Not Use or Store Near Heat or Open Flame

Directions For Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read all directions for use before applying this product.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Storage: Store in original container out of the reach of children and pets. Do not store above 100°F for extended periods of time. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

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

General Use Information

Dursban 1-12 Insecticide is an emulsifiable concentrate designed for use as a spray to control various pests around households and various pests injurious to trees, turf, ornamental plants and shrubs, and certain vegetables, fruits, and fruit and nut trees. The pests controlled are listed in the accompanying tables.

Handling Procedures for General Use:

- Do not allow spray to contact food, feedstuffs, or water supplies.
- Do not allow spray to contact food or food-contacting surfaces. Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated through application of this product.
- Remove pets before spraying.
- Keep out of fishpools or other bodies of water
- Do not use in poultry houses.
- Do not use as a space spray.
- Do not allow adults, children or pets on treated areas until spray has dried.

Mixing Instructions: When diluting Dursban 1-12 Insecticide, first, add approximately one-half of the water to the spray tank; add the proper amount of Dursban 1-12. Close the tank and shake for 5 to 10 seconds; then add the remaining water slowly.

Note: 1 fluid ounce = 2 tablespoonfuls = 6 teaspoonfuls

1 fluid ounce = 29.6 milliliters

Pest Control on Outside Surfaces and Around Buildings

Apply Dursban 1-12 Insecticide by application as a residual spray to outside surfaces of buildings and surrounding areas, including porches, window frames, doorways, foundations, eaves, patios, garages, refuse dumps, garbage cans and garbage areas, and other areas where pests congregate or have been seen or where they can gain entrance. Repeat treatment as needed to maintain effectiveness.

Use a band treatment to help prevent infestation of buildings. Treat a band of soil 6 to 10 feet wide around and adjacent to buildings, also the building foundation to a height of 2 to 3 feet, where pests are active and may find entrance. Apply as a coarse spray at the rate of about 10 gallons spray mixture per 1,000 square feet to thoroughly and uniformly wet the band areas.

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For Band Treatment:			
Pest†	Amount of Dursban 1-12 to Mix In Water to Make:		
	1 gallon	3 gallons	5 gallons
Ants	1/3 fl oz	1 fl oz	1-2/3 fl oz
Beetles (1)			
Box Elder Bugs			
Carpenter ants (1)			
Centipedes			
Clover mites			
Cockroaches (American, Smoky Brown)			
Crickets			
Earwigs			
Elm Leaf Beetles			
Fleas			
Millipedes			
Scorpions (2)			
Silverfish			
Sowbugs			
Spiders			
Springtails			
Ticks			

†Numbers in parenthesis refer to Specific Directions.

Specific Directions:

- (1) For additional information, see section on Control of Wood-Infesting Insects.
- (2) For scorpions remove accumulations of lumber, firewood, and other materials which serve as harborage sites and treat areas beneath and adjacent to infested areas.

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On Outside Surfaces

Pest†	Amount of Dursban 1-12 to Mix in Water to Make:		
	1 gallon	3 gallons	5 gallons
Ants	5-1/3 fl oz	1 pt	1-2/3 pt
Bees			
Beetles (1)			
Box Elder Bugs			
Carpenter ants (1)			
Carpenter bees (1)			
Centipedes			
Clover mites			
Cockroaches			
Crickets			
Earwigs			
Elm Leaf Beetles			
Fleas			
Flies			
Hornets			
House Flies			
Millipedes			
Mosquitoes			
Scorpions (2)			
Silverfish			
Sowbugs			
Spiders			
Springtails			
Ticks			
Wasps			
Yellowjackets			

†Numbers in parenthesis refer to Specific Directions.

Specific Directions:

- (1) For additional information, see section on Control of Wood-Infesting Insects.
- (2) For scorpions remove accumulations of lumber, firewood, and other materials which serve as harborage sites and treat areas beneath and adjacent to infested areas.

Pest†	Amount of Dursban 1-12 to Mix in Water to Make:	
	1 gallon	3 gallons
Ticks (1) Such As:	1 fl oz	3 fl oz
American dog tick		
Brown dog tick		
Cattle fever tick		
Deer tick		
Gulf coast tick		
Lone star tick		

†Numbers in parentheses refer to Specific Directions.

Specific Directions:

- (1) For control of ticks infesting areas around houses and in yard areas. Tuck pant legs into socks to avoid tick bites. An insect repellent sprayed onto lower legs and socks should give additional protection from possible bites. Wearing light colored pants and socks will aid in spotting ticks that may attach during treatment.

Treat perimeter of house by applying under shrubbery, in and around ground cover surrounding house, and around and under patios. Treat edges or perimeter of yard area where grass and other ground cover plants and other areas that appear likely to serve as harborage sites for ticks that have removed themselves from their host. Spray surfaces to be treated until wet, but do not create runoff. Prior to and following treatment, weeds and high grasses should be kept trimmed to reduce tick

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harborage sites. Rodents can serve as hosts for ticks. Rock piles, wood piles, and other rodent habitats should be removed or reduced. Key months for deer tick control are April through November in most parts of the country. For specific timing of application in your geographic area, contact your local extension service.

Note: This application is intended as a premise spray only. Do not use as a direct spray on pets or people. Take care to avoid creating mist or drift which may find its way to nontarget areas or bodies of water. Pets and children should not be allowed in treated areas until spray deposits have dried.

Control of Wood-Infesting Insects Outdoors

Use Dursban 1-12 Insecticide for the control of wood-infesting insects found around homes and other structures. For treatment of small areas, apply by brushing or spraying the diluted spray evenly on wood surfaces. For large or overhead areas, use a coarse, low-pressure spray, being careful to avoid dripping or run-off. Suitable protective clothing should also be worn in confined or overhead areas to help avoid exposure to eyes and skin. As a minimum, eye protection, protective head covering, chemically resistant gloves and footwear, a long-sleeved shirt and long-legged pants or coveralls are recommended.

Do not permit people or pets to contact treated surfaces until spray has dried. Treated areas (especially those which are confined) should be ventilated during and immediately following application before the areas are reoccupied.

Pest †	Amount of Dursban 1-12 to Mix in Water to Make:	
	1 gallon	3 gallons
Beetles (1) Such as: Anobiidae: -- Furniture beetles -- Deathwatch beetles -- False powderpost beetles Bostrichidae -- Appletwig borer Cerambycidae -- Longhorned beetles Lyctidae -- Powderpost beetles	5-1/3 fl oz	16 fl oz
Carpenter ants and other wood-infesting ants (2)		
Carpenter bees (3)		
Termites (4)		

†Numbers in parentheses refer to Specific Directions.

Specific Directions:

- (1) For beetles, spray infested areas and areas where infestations are likely to occur, including, but not limited to, wood surfaces, voids and channels in damaged wood, in spaces between wooden members of a structure, and between wood and foundations. Applications may be made to inaccessible areas by drilling and by then injecting the solution.
- (2) For wood-infesting ants, apply the spray around doors and windows and other places where these ants enter the premises and where they crawl and hide. Also spray into cracks and crevices or through openings or small, newly-drilled holes into wall voids or other areas where these ants or their nests are present. Do not spray water based sprays into electrical outlets or utilities.
- (3) For carpenter bees, spray or inject insecticide into holes and tunnels already made by carpenter bees, or spray onto localized areas where carpenter bees are beginning to build tunnels in wood.
- (4) For termites, spray localized areas of structures, including voids and channels in damaged wood, in spaces between wooden members of a structure and between wood and foundations where infestation is likely to occur. Treatment of localized areas is intended to kill workers and winged reproductive forms of termites in the treated areas and to prevent infestation for a temporary period.

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This type of application is not intended to be a substitute for soil treatment or mechanical alteration to control subterranean termites.

Turf and Other Outdoor Uses

Apply Dursban 1-12 Insecticide to control the pests listed in the following table by applying at the recommended dosages and in accordance with the directions given below. Dilute the dosage of Dursban 1-12 Insecticide given below in water (1 to 3 gallons of water per 1000 sq. ft.) and apply as a coarse, low-pressure spray using suitable application equipment. For best results, the lawn should be moist at time of treatment. Spray when pests first appear; retreat when needed.

Attention: Do not allow adults, children or pets on treated areas until spray has dried. Keep out of fishpools and other bodies of water.

Pest†	Amount of Dursban 1-12 per:	
	1000 sq ft	5000 sq ft
Ants (including foraging fire ants)	3 fl oz	15 fl oz
Armyworms (Such as: Beet, Fall, Yellowstriped)		
Centipedes		
Chiggers(1)		
Chinch bugs		
Clover mites		
Crickets		
Cutworms		
Deer Ticks(2)		
Earwigs		
Fiery skipper		
Fire ants (mounds)(3)		
Fleas (1)		
Grasshoppers		
Greenbugs		
June beetles		
Leafhoppers		
Lucerne moths		
Millipedes		
Mites (Such as: Clover, Formula grass, Winter grain)		
Mosquitoes(4)		
Sod webworms(5)(lawn moths)		
Sowbugs		
Springtails		
Ticks(1)		
European crane fly	4 fl oz	20 fl oz
Turfgrass weevils (Hyperodes)(6)	6 fl oz	2 pts
White grubs (Such as: Black turfgrass ataeinus, European chafer, Southern masked chafer, and Japanese beetle larvae)(7)	6 to 12 fl oz	2 to 4 pts
Bluegrass billbugs (8)	3 to 12 fl oz	1 to 2 pts

†Numbers in parentheses refer to Specific Directions.

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Specific Directions:

1. Use Dursban 1-12 Insecticide for area control of Fleas, Ticks and Chiggers infesting areas such as lawns, yards, around house and perimeter of yard, footpaths, and trails, picnic and camping sites, and other areas where these pests are present and create a nuisance or a possible public health problem. Treat perimeter of house by applying under shrubbery, in and around ground cover surrounding house, and around and under patios. Treat edges or perimeter of yard area where grass and other ground cover plants and other areas that appear likely to serve as harborage sites for ticks that have removed themselves from their host. When treating other areas away from house, treat low underbrush, grassy areas, weeds, and ground surface and debris using enough spray volume to obtain thorough coverage, usually 1 to 3 gallons per 1000 sq. ft. (5 to 15 gallons per 5000 sq. ft.). A maximum of 3 fl. oz. of Dursban 1-12 Insecticide may be applied per 1,000 square feet. Apply Dursban 1-12 Insecticide in water using a hydraulic sprayer, knapsack sprayer, or other suitable hand- or power-operated spray equipment. Spray surfaces to be treated until wet, but do not create runoff. Do not allow use of treated areas by pets or people during application or until spray has dried.
2. For control of deer ticks infesting areas such as lawns, yards, around house and perimeter of yard, footpaths, and trails, picnic and camping sites, and other areas where these pests are present and create a nuisance or a possible public health problem, tuck pant legs into socks to avoid tick bites. An insect repellent sprayed onto lower legs and socks should give additional protection from possible bites. Wearing light colored pants and socks will aid in spotting ticks that may attach during treatment.

Treat perimeter of house by applying under shrubbery, in and around ground cover surrounding house, and around and under patios. Treat edges or perimeter of yard area where grass and other ground cover plants and other areas that appear likely to serve as harborage sites for ticks that have removed themselves from their host. Apply Dursban 1-12 Insecticide in water using a hydraulic sprayer, knapsack sprayer, or other suitable hand- or power-operated spray equipment. Spray surfaces to be treated until wet, but do not create excessive runoff. Use enough spray volume to obtain thorough coverage, usually 5 gallons per 1000 sq. ft. (20 to 25 gallons per 5000 sq. ft.). A maximum of 3 fl. oz. of Dursban 1-12 Insecticide may be applied per 1,000 square feet.

Do not allow use of treated areas by pets or people during application or until spray has dried.

Prior to and following treatment, weeds and high grasses should be kept trimmed to reduce tick harborage sights. Rodents can serve as hosts for ticks. Rock piles, wood piles, and other rodent habitats should be removed or reduced. Key months for deer tick control are April through November in most parts of the country. For specific timing of application in your geographic area, contact your local extension service.

Note: This application is intended as a premise spray only. Do not use as a direct spray on pets or people. Take care to avoid creating mist or drift which may find its way to nontarget areas or bodies of water. Pets and children should not be allowed in treated areas until spray deposits have dried.

3. For individual fire ant mounds, apply Dursban 1-12 Insecticide as a drench, diluted at the rate of 1 fl. oz. per 1 gallon of water. Gently sprinkle a total of 1 gallon of the diluted spray over the surface of each mound using a gentle spray (such as a sprinkler can). Thoroughly wet mound and surrounding areas to a 4 ft. diameter (12 sq. ft.). For best results, apply in cool weather, 65-80 degrees F, or in early morning or late evening hours. Treat new mounds as they appear. Pressurized sprays may disturb the ants and cause migration, reducing control.
4. Mosquitoes coming to rest on areas treated for control of turf pests will be killed for varying periods of time after treatment, depending on exposure of treated areas to weathering conditions.
5. For sod webworms, delay watering and mowing the treated area for 12 to 24 hours after treatment.
6. For turfgrass weevils, spray suspected problem areas in mid-April and again in mid-May or as recommended by your Local Agricultural Extension Service specialist.

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7. For white grubs, spray when grubs are young and actively feeding near the soil surface, usually during late July and August or as recommended by your local Agricultural Extension Service specialist. For best results: irrigate the treated area with 1/2 to 1 inch of water immediately after spraying to wash the insecticide into the underlying soil where these pests congregate.
8. For bluegrass billbugs spray early in the season when adults first appear. Retreat as needed.

Ornamentals (Outdoor)

Use Dursban 1-12 Insecticide to treat flowers, shrubs, evergreens, vines, shade and flowering trees, and other ornamental plants found to be infested with pests listed in the following table. Dilute Dursban 1-12 Insecticide with water according to directions given in the table and apply using suitable hand- or power-operated spray equipment in a manner to provide complete and uniform coverage. For best results apply a coarse spray to thoroughly wet both upper and lower leaf surfaces and infested limb and trunk areas. Attempt to penetrate dense foliage but avoid overspraying to the point of excessive runoff. Treat when pests appear and repeat at 7 to 10 day intervals, if needed.

Consult your Extension Service specialist for application timing.

Note: Environmental factors can have effects on plant damage when the plants have been treated with an insecticide. Dursban 1-12 Insecticide has been tested on numerous ornamental plants without causing significant damage. However, do not use on azaleas, camellias, poinsettias, rose bushes, or variegated ivy because of possible injury to these plants.

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Printed September 10, 1993

Pest†	Amount of Dursban 1-12 to Mix in Water to Make:		
	1 gallon	3 gallons	5 gallons
Adelgids (Such as: Cooley and Eastern spruce galls, Pine bark)	1/3 fl oz	1 fl oz	1-2/3 fl oz
Ants (including foraging fire ants)			
Aphids (Such as: Apple, Chrysanthemum, Cottonwood, Elm leaf, Peach, Rose, Spirea, Woolly)			
Armyworms (Such as: Fall, Yellowstriped)			
Bagworms(1)			
Boxelder bugs			
Cankerworms			
Catalpa sphinx			
Chiggers			
Citrus mealybugs			
Elm spanworms			
Fall webworms			
Grasshoppers			
Green fruitworms			
Hornworms			
Jackpine budworms			
Juniper webworms			
Katydid			
Lace bugs			
Leafhoppers			
Leafrollers(2)			
Maple leafcutters(3)			
Mites (Such as: Clover, Red spider, Southern red)(4)			
Oleander caterpillars			
Orange tortrix			
Periodical cicada			
Plant bugs			
Psyllids			
Poplar tentmakers			
Puss caterpillars			
Rose chafers			
Sawflies, exposed (Such as: Pine, Pin oak, Redheaded)			
Sowbugs			
Spittlebugs			
Spring elm caterpillars			
Springtails			
Spruce budworms			
Tent caterpillars (Such as: Eastern, Forest, Western)			
Thornbug			
Walnut caterpillars			
Western spruce budworms			
Whiteflies			
Yellownecked caterpillars			

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†Numbers in parenthesis refer to Specific Directions.

Specific Directions:

1. For bagworms treat when insects are in the crawler stage.
2. For effective control of leafrollers spray should be applied before leaves are tightly rolled.
3. For effective control of maple leafcutter on maple trees apply spray to larvae as cases are being formed. Do not treat sugar maple trees intended for maple syrup production.
4. For effective control of spider mites when large numbers of eggs are present, apply a second spray 3 to 5 days in the South or 7 to 10 days in the North after initial treatment to control newly-hatched nymphs.

Pest†	Amount of Dursban 1-12 to Mix in Water to Make:		
	1 gallon	3 gallons	5 gallons
Armyworms (Beet) Beetles (Fuller rose, Native elm bark)(1) Cutworms Leafhoppers Mahogany webworms Mealybugs Mimosa webworms Moths (Such as: Browntail, Cypress tip, Douglas fir tussock, European pine shoot, Gypsy(2), Holly bud, Nantucket pine tip, Pandora, Pitch pine tip, Subtropical pine tip, Tussock) Oakworms (Such as: California, Orangestriped, Redhumped) Redhumped caterpillars Thrips (exposed) Weevils (Such as: Blackvine(3) Yellow Poplar, Pine reproduction)	2/3 fl oz	2 fl oz	3-1/3 fl oz
Beetles (Such as: Cottonwood leaf(4), Elm leaf, Flea, Willow leaf)	2/3 to 1 fl oz	2 to 4 fl oz	3-1/3 to 5 fl oz

Borers(5). Clearwing moths (Such as: Ash, Dogwood, Lesser peachtree, Lilac, Oak, Rhododendron), Metallic wood (Such as: Bronze birch, Flatheaded appletree, Twolined chestnut), Longhorned beetles (Such as: Lccust, Red oak) Cranberry girdler larvae(6) Leafminers Needleminers (Such as: Jeffrey pine, Lodgepole pine, Spruce) Scale crawlers (Such as: Cottonycushion, Cottony-maple, Euonymus, Fletcher, Florida wax, Golden oak, Hemispherical, Lecanium, Magnolia, Oak kermes, Oystershell, Pine needle, San Jose, Tea, White birch)	1-1/3 fl oz	4 fl oz	6-2/3 fl oz
Borers (Such as: Cottonwood, Peachtree)(7)	4 fl oz	12 fl oz	20 fl oz
Beetles(8) (Such as: cottonwood leaf, elm leaf, Flea, Fuller rose, Native elm bark(9), willow leaf)	5-1/3 fl oz	1 pt	1-2/3 pts
Beetles (Such as: Ambrosia, Anobiidae, Black turpentine, European elm bark, Japanese, June, Southern pine, Spruce)(10) Carpenter ants	10-2/3 fl oz	1 qt	1-2/3 qts

†Numbers in parenthesis refer to Specific Directions.

Specific Directions:

1. To reduce twig and branch feeding by bark beetles applications should be made in the spring or early summer.
2. To kill migrating and invading gypsy moth larvae treat trunks and foliage.
3. Blackvine weevils are night feeders. Late afternoon spraying will give control in some areas.
4. For cottonwood leaf beetles use Dursban 1-12 Insecticide in water to control larvae and adults infesting cottonwoods.
5. For borers, apply Dursban 1-12 Insecticide to the trunks and lower limbs of trees and shrubs when the adults begin to emerge. Consult your State Extension Service specialist for proper time to treat. Apply uniformly as a coarse low-pressure spray.
6. For cranberry girdler larvae direct spray at the base of plants. Irrigate immediately after application for soil penetration or 1-2 inches. Treat after egg laying during the summer.
7. For peachtree borers apply Dursban 1-12 Insecticide in water to flowering trees and shrubs of the genus Prunus as a trunk spray before newly-hatched larvae enter the trees. Apply as a coarse, low-pressure spray. Thoroughly wet all bark areas from ground level to scaffold limbs.
8. For preventive treatment apply the spray to the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For remedial treatment apply the spray to the main trunk of infested trees or logs when damage occurs but before adult beetles begin to emerge.
9. To prevent native elm bark beetles from overwintering in uninfested trees, apply Dursban 1-12 Insecticide in water to the bottom 9 feet of the trunk. Wet the trunk thoroughly but do not spray to

runoff. Apply the spray right to the base of the root flare. Application can be made from spring through to early fall.

10. For preventive treatment apply the spray to the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For remedial treatment apply the spray to the main trunk of infested trees when damage occurs but before adult beetles begin to emerge.

Control of Insects Infesting Fruit And Nut Trees

Use and Dosage Recommendations

Use Dursban 1-12 Insecticide at the dosages indicated by application as a foliar spray to control pests listed in the following tables. Treat the entire tree by application up to the point of runoff. Where a rate range is listed in the use directions, use the higher rate for more severe infestations. Treat when pests appear or consult your local Extension Service Specialist for best times to treat for the pests described.

Mow or beat down orchard blooming weed cover crops before applying spray to tree fruit crops to reduce hazard to bees, or treat late in the evening so that spray has a chance to dry before honeybees return to forage the next morning.

Crop	Insects Controlled	Amount of Dursban 1-12 to Mix In Water to Make:		
		1 gallon	3 gallons	5 gallons
Apples	Apple aphid (1) Apple Maggot Codling moth European apple sawfly Eyespotted bud moth European corn borer Fruit tree leafroller Green fruitworm Lesser appleworm Obliquebanded leafroller Orange tortrix Pandemis leafroller Oriental fruit moth Periodical cicada Plum curculio Redbanded leafroller Rosy apple aphid San Jose scale Tarnished plant bug Tufted apple budmoth Variegated leafroller Woolly apple aphid Dogwood borer (trunk spray)	2 fl oz	6 fl oz	10 fl oz

(1) To control apple aphid infesting apples, spray every 10 to 14 days on a preventative schedule.

Restrictions: Make no more than 8 applications per season. Do not apply last treatment within 28 days before harvest or apply last two treatments closer than 21 days apart.

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Crop	Insects Controlled	Amount of Dursban 1-12 to Mix in Water to Make:		
		1 gallon	3 gallons	5 gallons
Almonds	Navel Orangeworm Peachtwig borer San Jose scale	2-2/3 fl oz	8 fl oz	13-1/3 fl oz
Walnuts	Codling moth Walnut husk fly Walnut scale	2-2/3 fl oz	8 fl oz	13-1/3 fl oz
Filberts	Eyespotted bud moth Filbert aphid Filbert Leafroller Filbertworm Obliquebanded leafroller Omnivorous leaf tier Winter moth	2 to 3 fl oz	6 to 8 fl oz	10 to 15 fl oz

Dursban 1-12 Insecticide will perform best in an almond or walnut pest control program that includes winter sanitation (removal of mummy nuts) and regular monitoring of target pests.

Restrictions: Make only one dormant/delayed dormant spray application and no more than three foliar spray applications on almonds per season, one dormant/delayed dormant spray application and no more than two foliar spray application on walnuts per season, and no more than three foliar spray applications on filberts per season. Do not apply within 14 days of harvest.

Crop	Insects Controlled	Amount of Dursban 1-12 to Mix in Water to Make:		
		1 gallon	3 gallons	5 gallons
Pecans	Black pecan aphid Hickory shuckworm Pecan leaf scorch mite (1) (suppression) Pecan nut casebearer Phylloxera spp. (2) Fallwebworm Spittlebug Fire ants and other ant species (orchard floor) (3)	1-1/3 fl oz	4 fl oz	6-2/3 fl oz

- (1) To suppress pecan leaf scorch mite on pecans, use in a preventative program.
- (2) For best pecan Phylloxera control, use two applications 7 to 10 days apart starting at bud swell and ending by early leaf expansion.
- (3) For ant control on pecans, do not apply where weed growth or other obstructions would impede uniform coverage of the orchard floor.

Restrictions: Make no more than 5 applications per season. Do not apply within 28 days of harvest.

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Crop	Insects Controlled	Amount of Dursban 1-12 to Mix in Water to Make:		
		1 gallon	3 gallons	5 gallons
Sour Cherries	Borers: American plum Lesser peachtree Pacific flatheaded Peach twig Peachtree Shothole Climbing cutworm Green fruitworm Leafrollers Fruittree Obliquebanded Pandemis Redbanded Lesser appleworm Tarnished plant bug Moths Eyespotted bud Mineola Scale European fruit lecanium San Jose Stink bug	1-1/3 to 2 fl oz	4 to 6 fl oz	6-2/3 to 10 fl oz
	Black cherry aphid Cherry fruit fly Plum curculio Rose chafer	2 fl oz	6 fl oz	10 fl oz

Restrictions: Make no more than 8 applications per season. Do not apply within 14 days of harvest.

Crop	Insects Controlled	Amount of Dursban 1-12 to Mix in Water to Make:		
		1 gallon	3 gallons	5 gallons
Sweet Cherries	Lesser peachtree borer Great peachtree borer, American plum borer	2 to 4 fl oz	6 to 12 fl oz	10 to 20 fl oz

Specific Directions:

Apply as a coarse, low-pressure spray to give uniform coverage of tree trunks and lower limbs. Avoid contact with foliage (leaves) in sweet cherries as premature leaf drop may result.

Make a second application two weeks after the first one and a third application after harvest. Consult your Extension Service Specialist for proper time to treat in your area.

The third application can be substituted for a dormant or delayed dormant spray for control of San Jose scale, peach twig borer and climbing cutworms. For control of these pests mix 1 2/3 to 3 1/3 fluid ounces of Dursban 1-12 Insecticide with 1/2 to 1 pint of a petroleum oil recommended for dormant use in 5 gallons of water and spray the entire tree up to the point of runoff using a coarse spray. Use oil as recommended by your local Extension Service.

Restrictions: Make only 3 applications per year. Do not apply within 6 days of harvest.

Crop	Insects Controlled	Amount of Dursban 1-12 to Mix in Water to Make:		
		1 gallon	3 gallons	5 gallons
Nectarines Peaches	Peachtree borers	4 fl oz	12 fl oz	20 fl oz

Specific Directions:

Use Dursban 1-12 Insecticide for the control of peach tree borers by application as a trunk spray before newly hatched borers enter the trees. Mix the proper amount of Dursban 1-12 Insecticide with appropriate 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 Extension Service Specialist for proper time to treat in your area.

Restrictions: Make only one application per season. Do not apply within 14 days before harvest.

Dormant Spray (Tree Pests)**Specific Directions:**

Use Dursban 1-12 Insecticide as a dormant or delayed dormant spray at the rates indicated to control the listed insects. Tank mix with 2 1/2 to 5 fl oz of petroleum spray oil recommended for dormant use in 1 gallon of water (12 1/2 to 25 fl oz of dormant oil per 5 gallons of water). Spray the entire tree up to the point of runoff. Use the higher dosage of Dursban 1-12 Insecticide for severe infestations. Use oil as recommended by your Extension Service specialist.

Crop	Insects Controlled	Amount of Dursban 1-12 to Mix In Water to Make:		
		1 gallon	3 gallons	5 gallons
Apples	Rosy apple aphid San Jose scale Lygus Pandemis leafroller Climbing cutworms	1/3 to 2/3 fl oz	1 to 2 fl oz	1-2/3 to 3-1/3 fl oz
Pears	San Jose scale Climbing cutworms Pear psylla adults			
Plums Prunes	San Jose scale Mealyplum aphid Climbing cutworms Peach twig borer			
Almonds Peaches Nectarines	San Jose scale Peach twig borer Climbing cutworms			

Precautions: Because cold or dry conditions may cause sprays containing Dursban 1-12 Insecticide and dormant oil to penetrate the bark of trees, do not apply until winter rains or irrigation has replenished soil moisture such that bark and twigs are not desiccated. The penetration of Dursban 1-12 Insecticide and dormant oils into the bark can result in bud damage or drop.

Restrictions: Make only one application during the dormant season.

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Control of Insects Infesting Citrus Fruit Trees

Treat when insects become a problem or in accordance with the local spray schedule recommended by your Extension Service Specialist. Do not apply when temperature exceeds 95°F. Dursban 1-12 Insecticide 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 (when bees are not actively foraging) to allow insecticide to dry before honey bees are expected to visit.

Crop	Pests Controlled	Amount of Dursban 1-12 to Mix In Water to Make:		
		1 gallon	3 gallons	5 gallons
Grapefruit Lemons Oranges and other Citrus Fruits	Aphids Katydid Lepidopterous larvae Cutworms Fruitree leafroller Orange tortrix Western tussock moth Citrus thrips Mealy bugs Scale insects Black scale Brown soft scale California red scale Snow scale Chaff scale	1/3 to 1/2 fl oz	1 to 1-1/2 fl oz	1-2/3 to 2-1/2 fl oz

Precautions: Do not apply Dursban 1-12 Insecticide in combination with any other product.

Restrictions: Do not apply more than 2 applications per fruit year or more than 6 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. ft. per fruit year. Do not make second application within 30 days of first application. Do not treat within 21 days before harvest.

Control of Insects Infesting Fruits and Vegetables

Crop	Pests Controlled	Amount of Dursban 1-12 to Mix In Water to Make:		
		1 gallon	3 gallons	5 gallons
Grapes	Grape root borer	2-2/3 fl oz	8 fl oz	13-1/3 fl oz

Specific Directions:

Apply Dursban 1-12 Insecticide as a soil treatment for control of grape root borer by application just before the pest emerges from the soil. Contact your Extension Service Specialist to determine proper timing of pest emergence in your area. Mix the appropriate amount of Dursban 1-12

Insecticide with appropriate water as given in table above. 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 Dursban 1-12 Insecticide grapes is restricted to states east of the Rocky Mountains.

Crop	Pests Controlled	Amount of Dursban 1-12 to Mix In Water to Make:		
		1 gallon	3 gallons	5 gallons
Strawberries	Strawberry bud weevil	1 fl oz	3 fl oz	5 fl oz

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Specific Directions:

Use Dursban 1-12 Insecticide by application as a broadcast foliar spray to control strawberry bud weevil at the rate of 3 fl. oz. of Dursban 1-12 per 1000 sq. ft. Apply in a minimum of 3 gallons of spray per 1000 sq. ft. when buds first appear and 10 to 14 days later. Do not apply after berries start to form or when berries are present. Dursban 1-12 Insecticide should not be mixed with any other pesticides, surfactants, or fertilizer formulations. Phytotoxicity may occur when Dursban 1-12 Insecticide 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.

Crop	Pests Controlled	Amount of Dursban 1-12 to Mix in Water to Make:		
		1 gallon	3 gallons	5 gallons
Mint	Cutworms	1-1/2 to 3 fl oz	3 to 6 fl oz	7-1/2 to 15 fl oz
	Mint root borer	2 fl oz	6 fl oz	10 fl oz

Specific Directions:

Use Dursban 1-12 Insecticide by application as a broadcast, foliar spray to control cutworms at the rate of 3 to 6 fl. oz. per 1000 sq. ft. and mint root borer at the rate of 6 fl. oz. per 1000 sq. ft. Mix the specified dosage in water to give no less than 3 gallons of spray per 1000 sq. ft. For cutworm control, treat during May and June when damaging insect populations are developing or present. For mint root borer control, apply post-harvest when insect populations are developing or present. When larvae are less than 3/4 inches in length, use the 3 fl. oz. rate. When larvae are 3/4 inch or more in length, use the higher rate. Contact your Extension Service Specialist for proper timing in your area. For best results against both insect pests, follow treatment with approximately 1 inch of sprinkler watering immediately after application to incorporate the insecticide into the soil.

Restrictions: Make only one application during the growing season. Do not apply within 90 days before harvest. Make only one post-harvest application per season.

VEGETABLES**Onions (dry bulb)****Specific Directions:**

Use Dursban 1-12 Insecticide to control onion maggot by application as an in-furrow drench. Mix 1/2 fl. oz. Dursban 1-12 Insecticide in 1 gallon of water and apply to 100 linear feet of row. Incorporate to a depth of 1 to 2 inches.

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

**Cauliflower, Broccoli, Brussels Sprouts, Cabbage,
Chinese Cabbage, Collards, Kale, Kohlrabi, Turnips**

Use Dursban 1-12 Insecticide at the rate of 1/2 to 1 fl. oz. per 100 linear feet of row to control root maggots. For direct seeded crops, mix the designated amount of Dursban 1-12 Insecticide in 1 gallon of water and apply as a 4-inch wide band over the row at planting time. Incorporate into the soil using a hoe or other suitable equipment.

For transplanted crops, use the same mix but direct the spray to the base of the plants immediately after setting. Do not apply as a foliage application.

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

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Restrictions: Do not apply more than 6 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. ft. to cauliflower. Do not apply more than 7 1/2 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. ft. to broccoli, Brussels sprouts, cabbage, Chinese cabbage, collards, kale, kohlrabi, and turnip plants. Do not make more than one application per season or apply within 30 days before harvest.

Radishes

Mix The Dursban 1-12 Insecticide in 1 gallon of water. To control root maggots, apply 1/2 fl. oz. per 100 linear feet of row as a water-based drench in the seed furrows with the seed at planting time.

Restrictions: Do not apply more than 8 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. ft. or make more than one application per season.

Rutabagas

Mix The Dursban 1-12 Insecticide in 1 gallon of water. To control root maggots, apply 1/2 to 1 fl. oz. per 100 linear feet of row in a water-based spray as a 4-inch wide band over the row at planting time. Incorporate into the soil using a hoe or other suitable implement.

Restrictions: Do not apply more than 5.5 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. ft. or make more than one application per season. Do not use rutabaga tops for food or feed purposes.

Asparagus

Use Dursban 1-12 Insecticide to control cutworms, asparagus aphids, and asparagus beetles. Mix 1 fl. oz. of Dursban 1-12 Insecticide in 1 gallon of water and apply as a broadcast, foliar spray.

For cutworms, it is preferable to apply Dursban 1-12 Insecticide 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.

Restrictions: Do not apply more than 5.5 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. feet. 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 Dursban 1-12 Insecticide on asparagus is limited to the Midwest and Pacific Northwest.

Sweet Corn, Field Corn, Popcorn

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 Dursban 1-12 Insecticide at the following rates by application in sufficient water to the soil surface and incorporate into the soil:

Cutworms, symphylans: 3 to 6 fl. oz. per 1000 sq. ft.

Wireworms, billbugs, flea beetle larvae, grubs, seed corn maggots and seed corn beetle: 6 fl. oz. per 1,000 sq. ft.

Lesser cornstalk borer, corn rootworm larvae: 9 fl. oz. per 1000 sq. ft.

Use recommended rate in not less than 3 gallons of water per 1000 sq. ft. and apply as a broadcast spray to the soil surface using suitable equipment. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil using a garden tiller or hoe.

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Cultivation Time Treatment: Use Dursban 1-12 Insecticide at the rate of 3 fl. oz. per 1000 sq. ft. to control corn rootworm larvae. Apply Dursban 1-12 Insecticide in sufficient water and spray on both sides of the row at the base of the plants. 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 Dursban 1-12 Insecticide may be made in addition to an at-planting application of a granular formulation of Dursban Brand Insecticide.

Postemergence Treatment: Use Dursban 1-12 Insecticide at the following rate by application in sufficient water to ensure thorough coverage of treated plants:

Grasshoppers: 3/4 to 1 1/2 fl. oz. per 1000 sq. ft.

Armyworms, chinch bugs, aphids, corn rootworm adults, webworms, western bean cutworm: 1 1/2 to 3 fl. oz. per 1000 sq. ft.

European and southwestern corn borer, corn earworm: 2 to 3 fl. oz. per 1000 sq. ft.

Cutworms, billbugs, lesser cornstalk borer, flea beetle adults, common stalk borer: 3 to 4 1/2 fl. oz. per 1000 sq. ft.

Note: The recommended dosage will control silk clipping by corn rootworm adults.

Treat when pests become a problem. For best billbug, chinch bug, and flea beetle control, apply in 12 to 15 gallons of water per 1000 sq. ft. using suitable 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 directed to the base of the plant. When chinch bugs continue to immigrate to corn over a prolonged period, a second application of Dursban 1-12 Insecticide 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. For cutworms, it is preferable to apply Dursban 1-12 Insecticide 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 hoe or other suitable equipment immediately before or soon after treatment may improve control. Consult your Extension Service specialist for additional information concerning control practices in your area. For webworm control, shallow incorporation using a hoe or other suitable equipment immediately after treatment is necessary. For first-generation European corn borer control, treat when damage becomes evident. Applications should be directed into the corn whorls. For second-generation European corn borer control, treat when pests become a problem. A second application may be applied 10 to 14 days later, if needed due to reinfestation. Do not use Dursban 1-12 Insecticide in combination with any herbicide.

Restrictions: Do not apply within 35 days before harvest. Do not apply more than a total of 22 fl. oz. of Dursban 1-12 Insecticide per 1000 sq. ft. per season.

Peanuts

Use Dursban 1-12 Insecticide for control of the following pests at the dosages indicated. Mix the required dosage in enough water to ensure thorough coverage. To minimize chemical injury, do not apply Dursban 1-12 Insecticide to drought stressed peanuts within 3 days following irrigation or rain.

Lesser cornstalk borer: 3 to 6 fl. oz. per 1000 sq. ft. (as a directed spray to the base of the plants in an 8 to 10 inch wide band);

Armyworms, corn earworm, cutworms, leafhoppers, mites, rednecked peanutworm, thrips: 1 1/2 to 3 fl. oz. per 1000 sq. ft.

Velvetbean caterpillar, green cloverworm: 3/4 to 1 1/2 fl. oz. per 1000 sq. ft.
Apply as a broadcast, foliar spray using ground equipment when field counts indicate damaging insect populations are developing or present.

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Restrictions: Do not make more than one application per season as a directed spray. Directed and foliar sprays should not exceed 6 fl. oz. of Dursban 1-12 Insecticide per 1,000 square feet. Do not harvest within 21 days after treatment.

Sweet Potatoes

Use Dursban 1-12 Insecticide to control *Conoderus* wireworms, *Systema* flea beetles and the sweet potato flea beetle by preplant application at the rate of 6 fl. oz. per 1000 sq. ft. as a broadcast (overall) spray to the soil surface followed by incorporation. Mix the specified dosage with enough water to obtain uniform coverage of the treated area and apply as a coarse spray. After application, incorporate the insecticide into the soil to a depth of 4 to 6 inches using a hoe, or other suitable equipment. Plant the crop in the usual manner as soon as possible after treatment.

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

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 Dursban 1-12 Insecticide at the following rates by application in sufficient water to the soil surface and incorporate into the soil:

Cutworms: 3 to 6 fl. oz. per 1000 sq. ft.

Use recommended rate in not less than 3 gallons of water per 1000 sq. ft. and apply as a broadcast spray to the soil surface. On the same day of treatment, incorporate the insecticide into the top 2 to 4 inches of soil.

Postemergence Treatment: Use Dursban 1-12 Insecticide for control of the following pests at the dosage indicated by application in sufficient water to ensure thorough coverage of treated plants:

Cutworms: 3 to 4 1/2 fl. oz. per 1000 sq. ft.

Sunflower beetle larvae and adults, stem weevil, sunflower moth, banded sunflower moth, woollybears, and seed weevil: 1 1/2 to 2 fl. oz. per 1000 sq. ft.

Grasshoppers: 1 1/2 fl. oz. per 1000 sq. ft.

Apply as a broadcast spray when pests 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. Additional treatments should be made at successive 7 to 10 day intervals if field counts indicate need to re-treat.

Restrictions: Do not apply more than 13 1/2 fl. oz. of Dursban 1-12 insecticide per 1000 sq. ft. per season. Do not apply within 42 days before harvest.

Warranty Disclaimer

DowElanco 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, subject to the inherent risks set forth below. DowElanco Makes No Other Express or Implied Warranty of Merchantability or Fitness for a Particular Purpose or Any Other Express or Implied Warranty.

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Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of DowElanco or the seller. All such risks shall be assumed by Buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at DowElanco's election, one of the following:

- (1) Refund of purchase price by buyer or user for product bought, or
- (2) Replacement of amount of product used.

DowElanco shall not be liable for losses or damages resulting from handling or use of this product unless DowElanco is promptly notified of such loss or damage in writing. In no case shall DowElanco be liable for consequential or incidental damages or losses.

The terms of this Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of DowElanco or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

Final Printed Labeling (09/10/93):

- 1) Revised Precautionary Statements as per EPA conditions of acceptance in June 15, 1993 cover letter.
- 2) Reformatted tables and corrected spelling errors.

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