

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



OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Nov 2, 2000

John Jachetta, Ph.D.
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1054

Subject: Dursban 4E-N
EPA Reg. No. 62719-254
Submission dated 7/5/00

Dear Dr. Jachetta:

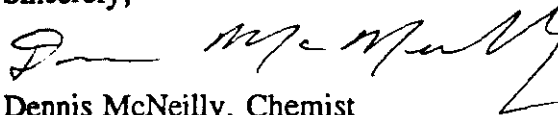
The revised labeling referenced to above, submitted in connection with the registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended, is acceptable provided that you make the labeling changes indicated before you release the product for shipment bearing the amended labeling:

- 1) On page one and four delete the sentence "To be applied only by or under the direct supervision of trained applicators responsible for insect control programs." The product is now a Restricted Use Pesticide (RUP) and this statement is redundant.
- 2) On pages one, two and six (two places), add the following after "protective eyewear": "(goggles, face shield, or safety glasses with front, brow, and temple protection)".
- 3) The REI on page 8 must be revised to 24 hours.
- 4) On page 12 revise the heading "Dormant Spray for Tree Pests" to "Dormant Spray for Tree Pests (Nurseries, Road Medians, Industrial Plant Sites, Orchards)".

As requested in your letter of July 5, 2000, the conditions of paragraph 5 of the June 2000 Memorandum of Agreement apply to this label amendment, specifically this amended label is effective Dec 1, 2000. Failure to comply with any of the conditions of registration set forth in Paragraph 10 the MOA shall be grounds for cancellation of the affected registration(s) under FIFRA section 6(e). Submit one copy of the revised final printed label before releasing the product for shipment. If the conditions enumerated above are not complied with, the registration will be subject to cancellation in accordance with FIFRA Section 6(e).

A stamped copy of the label is enclosed for your records. If you have questions, please contact Dennis McNeilly at (703) 308-6742 or electronically at mcneilly.dennis@EPA.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis McNeilly", written over a horizontal line.

Dennis McNeilly, Chemist
Insecticide-Rodenticide Branch
Registration Division (7505C)

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(Base Label):

RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

(Logo) Dow AgroSciences

Dursban* 4E-N

To be applied only by or under the direct supervision of trained applicators responsible for insect control programs.

Active Ingredient:

chlorpyrifos: O,O-diethyl O-
(3,5,6-trichloro-2-pyridinyl)

phosphorothioate	44.9%
Inert Ingredients	55.1%
Total	100.0%

Contains 4 pounds of chlorpyrifos per gallon.
Contains xylene range aromatic solvents.

ACCEPTED
with COMMENTS
In EPA Letter Dated:

NOV 2, 2000

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

62719-254

Precautionary Statements**Hazards to Humans and Domestic Animals****Keep Out of Reach of Children****WARNING****AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

**May Be Fatal If Swallowed • Absorption Through Skin May Be Fatal • Causes Substantial But
Temporary Eye Injury • Causes Skin Irritation • This Product May Cause Skin Sensitization
Reactions In Certain Individuals**

**Do not get in eyes, on skin, or on clothing. Avoid breathing vapors and spray mist. Handle
concentrate in a ventilated area. Keep away from food, feedstuffs, and water supplies.**

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options,
follow the instructions for category G on an EPA chemical resistance category selections chart. *** :

**WPS Uses: Applicators and other handlers who handle this pesticide for any use covered by the
Worker Protection Standard (40 CFR Part 170) -- in general, agricultural-plant uses are covered --
must wear:**

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

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- Chemical-resistant apron when cleaning equipment, mixing, or loading

Non-WPS Uses: Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) – in general, only agricultural-plant uses are covered by the WPS – must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

Organophosphate

If swallowed: Call a physician or Poison Control Center immediately. Do not induce vomiting. Contains an aromatic petroleum solvent. 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 in eyes: Flush with plenty of water for 15 minutes. Get medical attention.

If inhaled: Remove to fresh air if symptoms of cholinesterase inhibition appear and get medical attention immediately.

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

Environmental Hazards

This pesticide is toxic to birds and wildlife, and extremely toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. 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

Do not use or store near heat or open flame. Do not cut or weld container.

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Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for requirements about this standard.

Refer to label booklet for Directions for Use including Storage and Disposal.

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 emergency endangering health or the environment involving this product, call collect 517-636-4400.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-254

EPA Est. 464-MI-1

*Trademark of Dow AgroSciences

Dow AgroSciences • Indianapolis, IN 46268 USA

Specialty Insecticide

Net Contents __ gal

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(Label Booklet):

RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

(Logo) Dow AgroSciences

Dursban* 4E-N

To be applied only by or under the direct supervision of trained applicators responsible for insect control programs.

Active Ingredient:

chlorpyrifos: O,O-diethyl O-

(3,5,6-trichloro-2-pyridinyl)

phosphorothioate 44.9%

Inert Ingredients 55.1%

Total 100.0%

Contains 4 pounds of chlorpyrifos per gallon.

Contains xylene range aromatic solvents.

Keep Out of Reach of Children**WARNING****AVISO**

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(If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for requirements about this standard.

Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE), User Safety Recommendations, and Directions for Use including Storage and Disposal.

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 emergency endangering health or the environment involving this product, call collect 517-636-4400.

EPA Reg. No. 62719-254

EPA Est. 464-MI-1

*Trademark of Dow AgroSciences

Dow AgroSciences • Indianapolis, IN 46268 USA

Specialty Insecticide**Net Contents __ gal**

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(page 1 through end):

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Precautionary Statements

Hazards to Humans and Domestic Animals**Keep Out of Reach of Children****WARNING****AVISO**

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May Be Fatal If Swallowed • Absorption Through Skin May Be Fatal • Causes Substantial But Temporary Eye Injury • Causes Skin Irritation • This Product May Cause Skin Sensitization Reactions In Certain Individuals

Do not get in eyes, on skin, or on clothing. Avoid breathing vapors and spray mist. Handle concentrate in a ventilated area. Keep away from food, feedstuffs, and water supplies.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selections chart.

WPS Uses: Applicators and other handlers who handle this pesticide for any use covered by the Worker Protection Standard (40 CFR Part 170) -- in general, agricultural-plant uses are covered -- must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, or loading

Non-WPS Uses: Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) -- in general, only agricultural-plant uses are covered by the WPS -- must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

Organophosphate

If swallowed: Call a physician or Poison Control Center immediately. Do not induce vomiting. Contains an aromatic petroleum solvent. Do not give anything by mouth to an unconscious person.

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If inhaled: Remove to fresh air if symptoms of cholinesterase inhibition appear and get medical attention immediately.

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

Environmental Hazards

This pesticide is toxic to birds and wildlife, and extremely toxic to fish and aquatic organisms. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. 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

Do not use or store near heat or open flame. Do not cut or weld container.

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 carefully before applying.

Chemigation: Do not apply this product through any type of irrigation system.

Do not formulate this product into other end-use products.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

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Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. Certified crop advisors or persons entering under their direct supervision under certain circumstances may be exempt from the early reentry requirements pursuant to 40 CFR Part 170.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

- Adults, children, or pets should not contact treated surfaces until the spray has dried.

Storage And Disposal

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

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

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Metal Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by state or local authorities.

Plastic Container Disposal: Triple rinse (or equivalent). Then 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.

Reusable Portable Container Disposal: Do not rinse or put any other material into container. When returning reusable portable container, seal all openings and return to Dow AgroSciences.

General Information

Dursban* 4E-N insecticide is an emulsifiable concentrate for use to control pests injurious to turf, ornamentals, and fruit, nut, and citrus trees. The pests controlled are listed in the accompanying tables. Dursban 4E-N is compatible with insecticides, miticides, and fungicides commonly recommended except for alkaline materials such as Bordeaux mixture and lime. It is always recommended that a small jar compatibility test using proper proportions of chemicals and water be run to check for physical compatibility prior to tank mixing.

Attention: Keep out of fish pools and other bodies of water. Do not allow livestock to graze in treated areas. Do not feed treated grass cuttings (hay) or seed screenings to livestock or use hay for livestock bedding. Do not use in poultry houses or greenhouses. Use in outdoor residential areas or vegetable gardens is prohibited.

Ornamentals in Nurseries

Use Dursban 4E-N to treat flowers, shrubs, evergreens, vines, shade and flowering trees, and non-bearing fruit, nut and citrus trees found to be infested with the types of pests listed in the following tables.

Dilute Dursban 4E-N with water according to directions given in the tables and apply using suitable hand- or power-operated spray equipment in a manner to provide complete and uniform coverage. Attempt to penetrate dense foliage, but avoid over-spraying to the point of excessive runoff. When using spray equipment delivering less than 200 gallons of finished spray per acre, use the rate recommended in the per acre column. Uniform coverage is critical for effective insect and mite control.

Consult your State Agricultural Experiment Station or Extension Service Specialist for application timing and other specific use information.

Note: Phytotoxicity: Environmental factors and varietal differences have significant effects on phytotoxic expression. Dursban 4E-N insecticide has been tested on numerous ornamental plants without causing serious phytotoxicity at recommended use rates. Some varieties of azaleas, camellias, poinsettias, roses, and variegated ivy have shown varying degrees of phytotoxicity following treatment with Dursban 4E-N insecticide. Before treating large numbers of plants (especially those above), it is recommended that a small block of plants be treated and observed for 7 to 10 days to determine phytotoxic potential. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

Sucking Insects and Mites

Pest	Amount of Dursban 4E-N per		
	1 gallon	100 gallons	Acre
Adelgids (Such as: Cooley and Eastern spruce galls, Pine bark)	1/12 - 1/6 fl oz	8 fl oz - 1 pt	1 pt - 1 qt
Aphids (Such as: Apple, Balsam twig, Black pecan, Chrysanthemum, Cottonwood, Crape myrtle, Elm leaf, Melon, Peach, Rose, Spirea, White pine, Woolly, Woolly apple, Yellow pecan)			
Boxelder bugs			
Lace bugs (Such as: Hawthorn)			
Periodical cicada			
Plant bugs			
Psyllids			
Spittlebugs			
Thornbug			
Whiteflies			

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Leafhoppers Mealybugs (Such as: Citrus, Taxus) Mites (Such as: Clover, Red spider, Southern red, Spruce spider, Twospotted spider) (1) Thrips (exposed)	1/6 fl oz	1 pt	1 qt
Scale insects (Such as: Cottony cushion, Cottony maple, Dearness, Euonymus, Fletcher, Florida wax, Golden oak, Hemispherical, Lecanium, Magnolia, Oak kermes, Oak lecanium, Oystershell, Pine needle, San Jose, Tea, White birch) (2)	1/3 fl oz	1 qt	1 - 2 qt

Specific Directions:

- 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.
- Time applications for control of **scale insects** when crawlers or first two stages of settled nymphs are present.

Defoliators and Leafminers

Pest	Amount of Dursban 4E-N per			
	1 gallon	100 gallons	Acre	
Armyworms (Such as: Fall, Yellowstriped) Bagworms (1) Cankerworms Catalpa sphinx Elm spanworms Fall webworms (2) Grasshoppers Greenstriped mapleworms Green fruitworms Hornworms Jackpine budworms Juniper webworms Katydids Leafrollers (3) Maple leafcutters (4) Oak skeletonizers Oleander caterpillars	Orange tortrix Poplar tentmaker Puss caterpillars Rose chafers Sawflies, exposed (Such as: European pine, Pine, Pin oak, Redheaded) Spring elm caterpillars Springtails Spruce budworms (Such as: Eastern, Western) Tent caterpillars (Such as: Eastern, Forest, Western) Walnut caterpillars Yellownecked caterpillars	1/12 - 1/6 fl oz	8 fl oz - 1 pt	1 pt - 1 qt
Balsam gall midge Beet armyworms Beetles (Such as: Fuller rose) (5) Browntail moth Cutworms Cypress tip moth Douglas-fir tussock moth European pine shoot moth Gypsy moth (6) Holly bud moth Mahogany webworms	Mimosa webworms Nantucket pine tip moth Oakworms (Such as: California, Orangestriped, Redhumped) Pandora moth Pitch pine tip moth Redhumped caterpillars Subtropical pine tip moth Tussock moth	1/6 fl oz	1 pt	1 qt
Beetles (Such as: Cottonwood leaf (7), Elm leaf, Flea, Willow leaf)		1/6 - 1/3 fl oz	1 pt - 1 qt	1 qt
Leafminers Needleminers (Such as: Jeffrey pine, Lodgepole pine, Spruce) Pine needle midge Rhododendron gall midge		1/3 fl oz	1 qt	1 - 2 qt

Specific Directions:

- For **bagworms**, treat when larvae are small and actively feeding.

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2. For effective control of **fall webworms**, direct spray into web and immediately surrounding foliage.
3. For effective control of **leafrollers**, spray should be applied before leaves are tightly rolled.
4. For **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.
5. To reduce foliar feeding on twigs and branches by **beetles**, applications should be made in the spring or early summer.
6. To control migrating and invading **gypsy moth larvae**, treat trunks and foliage.
7. For **cottonwood leaf beetles**, spray larvae and adults infesting cottonwoods. Applications should be made when damaging beetle populations are developing or present.

Borers, Bark Beetles, and Weevils

Pest		Amount of Dursban 4E-N per		
		1 gallon	100 gallons	Acre
Weevils	(Such as: Black vine (1), Pine reproduction, Yellow poplar)	1/6 fl oz	1 pt	1 - 2 qt
	Cranberry girdler (2)	1/6 fl oz	1 pt	-
Borers: Clearwing moths (Such as: Ash, Dogwood, Lesser peachtree, Lilac, Oak, Peachtree, Rhododendron), Longhorned beetles (Such as: Cottonwood, Locust, Red oak), Metallic wood (Such as: Bronze birch, Flatheaded apple tree, Twolined chestnut) (3)		1/3 fl oz	1 qt	-
Pales weevil adults Zimmerman pine moth				
Northern pine weevil (4) Pales weevil (4)		1 fl oz	3 qt	-
Beetles (5): (Such as: Ambrosia, Anobiidae, Black turpentine, Blister, Cottonwood leaf, Elm leaf, European elm bark, Fuller rose, Japanese, June, Mountain pine, Native elm bark (6), Southern pine, Spruce, Western pine, Willow leaf)		2-2/3 fl oz	2 gal	-
Weevils (Such as: Northern pine, Pitch eating, Twig) (7)		5-1/3 fl oz	4 gal	-

Specific Directions:

1. **Black vine weevils** are night feeders. Late afternoon spraying will maximize control.
2. For **cranberry girdler** larvae infesting Douglas-fir seedlings, direct spray at lower crown and stems following egg laying during summer. **For nurseries:** apply a minimum of 50 gallons of dilute spray per acre and irrigate immediately after application to move the insecticide into the top 1 to 2 inches of soil.
3. For **borers**, spray trunks and lower limbs of trees and shrubs when adults begin to emerge. For **peachtree borers**, spray flowering trees and shrubs of the genus *Prunus* as a trunk spray before newly-hatched larvae enter the trees and thoroughly wet all bark areas from ground level to scaffold limbs. Pheromone traps made aid in detection of adult clearwing moths. Consult your State Agricultural Experiment Station or Extension Service Specialist for proper time to treat.
4. For control of **northern pine and pales weevil** larvae, apply as a cut stump spray or drench in winter or early spring.
5. For **preventive treatment**, spray the main trunk of trees in the early spring or when threat of attack exists from nearby infested trees. For **remedial treatment**, spray the main trunk of infested trees or logs before adult beetles begin to emerge.
6. To prevent **native elm bark beetles** from over-wintering in uninfested trees, apply using a dilution of 1 gal per 100 gallons of water (1 1/3 fl oz per gallon) as a spray to the bottom 9 feet of trunk. Wet the trunk thoroughly but do not spray to runoff. Care should be taken to apply the spray right to the base of the root flare. Applications can be made from spring to early fall. To reduce twig and branch feeding on trees deemed to be of high value, apply as a spray to the tree crown using a dilution of 1 gal per 100 gallons of water (1 1/3 fl oz per gallon). Applications should be made in the spring or early summer using a sprayer that will give thorough coverage to the tree crown.

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7. For pine seedlings, treat immediately after transplanting. Treat each seedling with enough spray to thoroughly wet the foliage and stem to the point of runoff. For nurseries: do not use more than 6 gallons of spray dilution per acre.

Ants, Termites, and Miscellaneous Pests

Pest	Amount of Dursban 4E-N per		
	1 gallon	100 gallons	Acre
Ants	1/6 fl oz	1 pt	1 qt
Cockroaches (Such as: American, Asian, Brownbanded, German, Oriental, Smokybrown, Wood)			
Fire ants (foraging workers)			
Fire ants (mounds) (1)			
Sowbugs			
Springtails			
Carpenter ants (2)	2-2/3 fl oz	2 gal	-
Termites			

Specific Directions:

- For individual fire ant mounds apply Dursban 4E-N as a drench. Dilute 1 fl oz per 4 gallons of water. Gently sprinkle 1 to 2 gallons of the diluted insecticide over the surface of each mound and surrounding areas to a 2 foot diameter. For best results, apply in cool weather, 65-80° 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 product effectiveness.
- If possible, locate carpenter ant nests and drench thoroughly.

Dormant Spray for Tree Pests

Use Dursban 4E-N as a dormant or delayed dormant spray at the rates indicated to control the listed insects. While Dursban 4E-N may be used without oil, oil is recommended to control additional pests such as European red mite.

For high volume (dilute) sprays (200 to 600 gallons of spray mixture per acre), tank mix the specified dosage with 1 to 2 gallons of a petroleum spray oil recommended for dormant use per 100 gallons of water. Spray the entire tree to runoff using suitable ground spray equipment.

For low volume (concentrate) sprays (less than 200 gallons of spray mixture per acre), use the same amount of Dursban 4E-N as for a dilute spray and apply in a manner that will ensure thorough coverage of the trees. Use oil as recommended by your State Agricultural Experiment Station or Extension Service Specialist.

Precautions: Because cold dry conditions may cause Dursban 4E-N plus oil to infuse trees resulting in bud damage or drop, do not apply until rain or irrigation has replenished soil moisture such that bark and twigs are not desiccated. Do not use more than 4 pints of Dursban 4E-N insecticide per acre.

Restrictions: Make only one application during the dormant season except for control of the apple ermine moth. Do not allow meat or dairy animals to graze in treated areas.

Pest	Amount of Dursban 4E-N per	
	1 gallon	100 gallons
Apple ermine moth (1)	1/12 fl oz	1/2 pt
Aphids (Such as: Mealy plum, Rosy apple, Woolly apple)	1/12 - 1/6 fl oz	1/2 - 1 pt
Borers (Such as: Peach twig)		
Cutworms (Such as: Climbing)		
Leafrollers (Such as: Obliquebanded, Pandemis)		
Pear psylla adults		
Scale insects (Such as: San Jose)		

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Specific Directions:

1. For control of apple ermine moth on *Malus* species, make 2 applications at a 7 - 14 day interval of Dursban 4E-N insecticide in combination with a petroleum spray oil at the rate of 2 - 4% (volume:volume) in a spray to wet application to ensure thorough coverage of all stems and branches. When using tank mixtures, also follow all label directions for the mixing partner (oil). Use appropriate application equipment and spray volumes to ensure complete coverage of the plant(s) or control will be compromised.

Ornamentals (Soil Treatment of Containerized or Balled and Burlapped Nursery Stock)

Use Dursban 4E-N insecticide to treat containerized (potted) or balled and burlapped nursery stock to control soil insects.

Pest	Amount of Dursban 4E-N per	
	1 gallon	100 gallons
Fire ants (1)	1/25 fl oz	4 fl oz
Coffee root mealybug (2)	1/6 fl oz	1 pt
Weevils (Such as: Black vine) (2)	2/3 fl oz	2 qt
White grubs (3)		

General Use Directions

Completely submerge the container with drain holes or root ball stabilized by burlap in a tank containing diluted Dursban 4E-N insecticide. Do not remove burlap wrap or containers with drain holes prior to submerging. Keep the container or root ball submerged until complete soil saturation has occurred, normally about 30 seconds.

Precautions: During all operations (submerging, drenching, injecting), wear chemical resistant apron in addition to other PPE listed for applicators and other handlers. Application should be made in a well-ventilated area.

Environmental factors significantly affect phytotoxicity. Dursban 4E-N has tested on numerous ornamental plants without causing serious phytotoxicity. However, because of the numerous varieties grown, it is recommended that a small group of plants be treated at the recommended rate under the anticipated growing conditions and observed for phytotoxic symptoms for at least 7 days, before a large number of plants are treated. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

Specific Directions:

1. An alternative treatment to submerging containerized or balled and burlapped plants is to drench the soil ball or container with the diluted insecticide solution to the point of runoff on a twice-daily schedule for three consecutive days. Do not remove burlap wrap or container from plants prior to treatment.
2. An alternative treatment to submerging containerized plants is to drench the container with the diluted insecticide solution applying approximately 10 to 12 fl oz of diluted insecticide solution per gallon of container size (4 - 5 fl oz/100 cubic inches of container). The container media should be pre moistened by irrigation or rainfall before drenching. Do not remove container from plants prior to treatment.
3. An alternate treatment to submerging balled and burlapped plants is to inject Dursban 4E-N insecticide into the root ball. Equally distribute 1 to 3 quarts of the dilute solution of Dursban 4E-N per cubic foot of soil volume through an injection rod inserted into the soil ball surrounding the plant roots. Uniform distribution of the insecticide throughout the soil of the root ball is critical for effective control. It is recommended that the injection rod be inserted in at least four equally spaced locations around the stem of the plant at a 30 - 45 degree angle from the plant between the stem and the upper outer perimeter of the ball. This technique has been shown to be most effective with small root balls (up to

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1.5 ft diameter). Larger root balls may require more injection points to ensure thorough soil distribution of the insecticide. The injection rod should be coupled to a flow meter to monitor the correct volume applied per root ball using an injection pressure of at most 30 psi. The application should be made such that splash-back and runoff are minimized.

Ornamentals (Pre-Plant Incorporation Treatment of Field Grown Nursery Stock)

White Grubs and White Fringed Beetles

Apply Dursban 4E-N insecticide to soil and incorporate before transplanting or planting to control white grubs and white fringed beetles during transplant or seedling establishment. Apply to the soil surface as a broadcast spray at a rate of 4 quarts per acre using sufficient water to obtain adequate coverage. Do not aerially apply. On the same day of the treatment, incorporate the insecticide into the top 2 to 4 inches of the soil using a tandem disc, field cultivator, or equivalent incorporation equipment capable of thorough soil mixing.

Precaution: Environmental factors and varietal variation can significantly affect the potential for phytotoxicity from pesticide use. Dursban 4E-N insecticide has been evaluated at the above indicated rate on loblolly pine without phytotoxic effects. Growers should prepare and observe a small test plot as above in order to determine the potential phytotoxicity in species or varieties other than loblolly pine. The following procedure should be used: 1) Treat a small test block as above; 2) Seed or transplant the test species or variety and observe for symptoms of phytotoxicity for a minimum of 14 days following emergence or transplanting. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

Garden Symphylans

Apply Dursban 4E-N insecticide as a preplant incorporated treatment to suppress garden symphylans on land to be planted to field grown ornamentals. Apply as a broadcast application to the soil surface at the rate of 2 - 4 quarts per acre in at least 10 gallons of water per acre. On the same day of treatment incorporate the insecticide to a depth of up to 8 inches using a disc, rotovator or other suitable equipment. Use the higher rate range for longer residual or where deeper incorporation is necessary.

Precaution: Environmental factors significantly affect phytotoxicity. Dursban 4E-N insecticide has been tested on numerous ornamental plants without causing serious phytotoxicity. However, because of the numerous varieties grown, it is recommended that a small group of plants be treated at the recommended rate under the anticipated growing conditions and observed for phytotoxic symptoms for at least 7 days, before a large number of plants are treated. Do not blend Dursban 4E-N insecticide with dry bulk fertilizer materials. **Note:** The professional user assumes responsibility for determining if Dursban 4E-N is safe to treated plants under commercial growing conditions.

Non-bearing Fruit, Nut and Citrus Trees in Nurseries

Use Dursban 4E-N to treat non-bearing **almond, apple, cherry, filbert, nectarine, peach, pecan, walnut and citrus trees or tree fruit** (such as: **grapefruit, lemon, orange**) by spraying to the point of runoff. When treating citrus trees only, a petroleum spray oil recommended for use on citrus trees may be added to spray mixtures only at rates of up to 1.8 gallons per 100 gallons of water to improve control of aphids, mealybugs, scale insects, and thrips. Treat when insects become a problem or in accordance with the local spray schedule recommended by your State Extension Service Specialist.

Precautions:

Do not apply as a foliar spray to **sweet cherries** because contact of spray solution with leaves may result in premature leaf drop. Observe local use directions for tank mix combinations especially with applications of Dursban 4E-N plus spray oil. Do not apply Dursban 4E-N in combination with oil to **walnuts**. Dry or cold conditions may cause Dursban 4E-N plus oil to infuse trees resulting in bud damage.

or drop; do not apply until rain or irrigation has replenished soil moisture such that bark and twigs are not desiccated. Do not apply when trees are stressed by drought.

Pest		Amount of Dursban 4E-N per		
		1 gallon	100 gallons	Acre
Aphids (Such as: Apple, Black cherry, Black pecan, Filbert, Rosy apple, Woolly apple, Yellow pecan)	Lepidopterous larvae Lesser appleworm Lygus sp. Mealybugs Mineola moth	1/6 - 1/3 fl oz †	1 pt - 1 qt †	1 - 2 qt
Apple maggot	Mites (Such as: Citrus rust, European red, Pecan leaf scorch, Twospotted spider) (2)			
Borers (Such as: American plum, Dogwood, Lesser peachtree, Pacific flatheaded, Peach twig, Peachtree, Shothole)	Navel orangeworm Oriental fruit moth Pecan nut casebearer Pecan weevil Periodical cicada Phylloxera spp. Plum curculio Potato leafhopper Rose chafer Scale insects (Such as: European fruit lecanium, San Jose, Walnut)			
Cherry fruit fly	Spittlebug			
Climbing cutworm	Spotted tentiform leafminer			
Codling moth	Stinkbug			
European apple sawfly	Tarnished plant bug			
European corn borer	Thrips (Such as: Citrus)			
Eyespotted bud moth	Tufted apple budmoth			
Fall webworm	Walnut husk fly			
Filbert worm	Western tussock moth			
Grasshoppers (Such as: Lubber) (1)	White apple leafhopper			
Green fruitworm	Winter moth			
Hickory shuckworm				
Katydid				
Leaf rollers and tiers (Such as: Avocado leafroller, Filbert leafroller, Fruittree leafroller, Obliquebanded leafroller, Omnivorous leaftier, Orange tortrix, Pandemis leafroller, Redbanded leafroller, Variegated leafroller)				
Scale insects (Such as: Black scale, Brown soft scale, California red scale, Chaff scale, Florida red scale, Long scale, Purple scale, Snow scale) (3)		1/3 - 2/3 fl oz	1 - 2 qt	2 - 4 qt

Specific Directions:

1. **Lubber grasshoppers** must be controlled when they are small (less than 1 inch in length) by direct contact with spray.
2. 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.
3. Time applications for control of **scale insects** when crawlers or first two stages of settled nymphs are present.

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Turf in Golf Courses, Road Medians and Industrial Plant Sites (Maximum Use Rate of 2 lb (1 lb a.i.)/Acre)

Labeled turf uses within this section of the label are not within the scope of the WPS. Follow reentry requirements in the "Non-agricultural Use Requirements" box under "Directions for Use".

Use Dursban 4E-N to control the pests listed in the following table by application at the recommended dosages. Dilute Dursban 4E-N in water and apply using suitable application equipment. For best results, turf should be moist at time of treatment.

Pest	Amount of Dursban 4E-N per	
	1,000 sq. ft.	Acre
Ants	3/4 fl oz	1 qt
Armyworms (Such as: Beet, Fall, Yellowstriped)		
Centipedes		
Chiggers (1)		
Chinch bugs		
Crickets		
Cutworms		
Deer ticks (2)		
Earwigs		
European crane fly larvae		
Fiery skipper		
Fire ants (foraging workers)		
Fire ants (mounds) (3)		
Fleas		
Gnats		
Grasshoppers		
Greenbug aphids		
Green June beetle grubs		
Leafhoppers		
Lucerne moth		
Millipedes		
Mites (Such as: Clover, Bermudagrass stunt, Winter grain)		
Mosquitoes (4)		
Pillbugs		
Sod webworms (lawn moths) (5)		
Sowbugs		
Ticks (1)		

Specific Directions:

1. Use Dursban 4E-N for area control of **ticks** and **chiggers** infesting golf courses, road medians, and industrial plant sites where these pests are present and create a nuisance or a possible public health problem. Do not allow public use of treated areas during application or until spray has dried. Apply Dursban 4E-N insecticide in water at the rate of 1/2 pint per acre (1/6 fl oz per 1,000 sq ft) using a hydraulic sprayer, mist applicator, backpack sprayer, or other suitable hand- or power-operated spray equipment.
2. For control of **deer ticks** apply Dursban 4E-N in water at the rate of 1 quart per acre or 3/4 fl oz per 1,000 sq ft. Treat low underbrush, turf, grassy areas, weeds, and ground surface and debris, using enough spray volume to obtain thorough coverage.
3. For individual **fire ant mounds** apply Dursban 4E-N as a drench. Dilute 1 fl oz per 4 gallons of water. Gently sprinkle 1 to 2 gallons of the diluted insecticide over the surface of each mound and surrounding areas to a 2 foot diameter. For best results, apply in cool weather, 65-80° 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 product effectiveness.
4. **Mosquitoes** coming to rest on areas treated for control of turf pests will be controlled for varying periods of time after treatment depending on exposure of treated areas to weathering conditions.
5. For **sod webworms**, watering or mowing of the treated area should be delayed for 12 to 24 hours after treatment.

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provide control or as recommended by your local Agricultural Extension Service Specialist. For best results, apply when young nymphs are active.

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, soil should be moist prior to treatment. **For best results, immediately after spraying, irrigate the treated area with 1/2 to 1 inch of water to wash the insecticide deep into the thatch or into the underlying soil.**

Warranty Disclaimer

Dow AgroSciences 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. Dow AgroSciences **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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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 Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

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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 Dow AgroSciences' election, one of the following:

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

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