

BASE LABEL



Crossbow*

Low Volatile Weed and Brush Herbicide

For the control of most kinds of unwanted trees and brush, as well as annual and perennial broadleaf weeds on rangeland, permanent grass pastures, conservation reserve program (CRP) acres, fence rows, non-irrigation ditchbanks, roadsides, other non-crop areas and industrial sites

Active Ingredients	
2,4-dichlorophenoxyacetic acid butoxyethyl ester†	34.4%
triclopyr - 3,5,6-trichloro-2-pyridinyloxyacetic acid butoxyethyl ester	16.5%
Inert Ingredients	49.1%
Contains Petroleum Distillates	
Acid Equivalents	
2,4-dichlorophenoxyacetic acid - 23.7% - 2 lb/gal	
triclopyr - 11.9% - 1 lb/gal	
†Isomer Specific by AOAC Method No. 978.05 (15th Ed.)	

Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

CAUTION

Harmful if Swallowed, Inhaled, Or Absorbed Through Skin • Causes Eye Irritation • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Skin Reactions In Some Individuals

Avoid contact with skin, eyes, or clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating or smoking. When handling this product wear suitable eye protection and chemical resistant gloves. Remove and wash contaminated clothing before reuse.

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

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. 62719-260

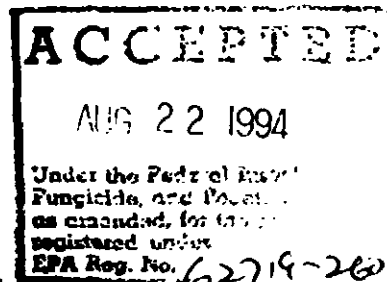
EPA Est. 464-MI-1
900-002744 / 00013931

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Specialty Herbicide

Net Contents 1 qt

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LABEL BOOKLET



Crossbow*

Low Volatile Weed and Brush Herbicide

For the control of most kinds of unwanted trees and brush, as well as annual and perennial broadleaf weeds on rangeland, permanent grass pastures, conservation reserve program (CRP) acres, fence rows, non-irrigation ditchbanks, roadsides, other non-crop areas and industrial sites

Active ingredients:

2,4-Dichlorophenoxyacetic acid	34.4%
butylcellulose	
Diethylamine	16.5%
acid sulfate salts	49.1%

Other ingredients:

Contains Petrolatum, Dodecane, Acetyl Salicylic Acid, Ethylhexylglycol, 1,1,1-Trichloro-2,2,2-trifluoroethane, and other inert ingredients.

Keep Out of Reach of Children

CAUTION

Refer to back panel of container for precautionary information and Directions for Use, including Storage and Disposal.

Notice: Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.

For more information, contact your local agricultural retailer or call 1-800-333-9333.

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Specialty Herbicide Net Contents 1 qt

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Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION PRECAUCION:

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.)

Harmful If Swallowed, Inhaled, Or Absorbed Through Skin • Causes Eye Irritation • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Skin Reactions In Some Individuals

Avoid contact with skin, eyes, or clothing. Avoid breathing vapor. Wash thoroughly with soap and water after handling and before eating or smoking. When handling this product wear suitable eye protection and chemical resistant gloves. Remove and wash contaminated clothing before reuse.

First Aid

In case of contact: Flush skin or eyes with plenty of water. Get medical attention if irritation persists.
If swallowed: Do not induce vomiting. Call a physician or poison control center.

Environmental Hazards

This product is toxic to fish. Drift or runoff may adversely affect fish and nontarget plants. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

Mixing and Loading: Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

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Physical or Chemical Hazards

Combustible — 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.

This product may not be applied to forage that is to be cut and sold for commercial purposes.

Storage and Disposal

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

Storage: Store above 10°F or agitate before use.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. 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.

Plastic Container Disposal: Do not reuse container. Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Consult federal, state, or local disposal authorities for approved alternative procedures.

Metal Container Disposal: Do not reuse container. Triple rinse (or equivalent). Puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Consult federal, state, or local disposal authorities for approved alternative procedures.

General Information

Crossbow herbicide is recommended for control of most species of unwanted woody plants, as well as annual and perennial broadleaf weeds, growing on rangeland, permanent grass pastures, CRP, fence rows, non-irrigation ditchbanks, roadsides, other non-crop areas, and industrial sites.

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General Use Precautions

Apply this product only as specified on this label.

Be sure that use of this product conforms to all applicable regulations.

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

Foliar sprays should be applied during warm weather when brush and weeds are actively growing. Application under drought conditions may provide less than desirable results. Use low spray pressures to minimize spray drift. **Apply Crossbow in a manner to avoid contacting nearby susceptible crops or other desirable plants and to avoid contaminating water intended for irrigation or domestic use. Read and follow all use precautions given on this label.**

Do not use on bentgrass. Do not use on newly seeded grasses until grass has established a good root system and is tillering.

Do not reseed pastures within a minimum of three weeks after treatment.

Do not spray pastures containing desirable broadleaf forbs, especially legumes such as clover, unless injury or loss of such plants can be tolerated. However, the stand and growth of established grasses usually is improved, particularly when rainfall is adequate and grazing is deferred.

Do not apply Crossbow directly to, or otherwise permit it to come into direct contact with cotton, grapes, tobacco, vegetable crops, citrus, flowers, fruit or ornamental trees, or other desirable broadleaf plants and do not permit spray mists containing it to drift onto them.

Grazing and Haying Restrictions

Grazing or harvesting green forage:

1) Lactating dairy animals

Two gallons/acre or less: Do not graze or harvest green forage from treated area for 14 days after treatment.

Greater than 2 gallons to 4 gallons/acre: Do not graze or harvest green forage until the next growing season.

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- 2) Other Livestock
 - Two gallons/acre or less: No grazing restrictions.
 - Greater than 2 gallons to 4 gallons/acre: Do not graze or harvest green forage from treated area for 14 days after treatment. **Note:** If less than 25% of a grazed area is treated, there is no grazing restriction.

Haying (harvesting of dried forage):

- 1) Lactating dairy animals
 - Do not harvest hay until the next growing season.
- 2) Other Livestock
 - Two gallons/acre or less: Do not harvest hay for 7 days after treatment.
 - Greater than 2 gallons to 4 gallons/acre: Do not harvest hay for 14 days after treatment.

Slaughter Restrictions:

Withdraw livestock from grazing treated grass or consumption of treated hay at least 3 days before slaughter. This restriction applies to grazing during the season following treatment or hay harvested during the season following treatment.

Avoid injurious spray drift. Applications should be made only when hazards from spray drift are at a minimum. Very small quantities of spray, which may not be visible may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible crops or ornamental plants near enough to be injured. Spray drift can be reduced by adding a spray thickening agent such as Nalco-Trol or its equivalent to the spray mixture. If a spray thickening agent is used, follow all use recommendations and precautions on the product label. With ground broadcast equipment, drift can be reduced by keeping the spray boom as low as possible; by applying no less than 20 gallons of spray per acre; by keeping the operating spray pressures at the lower end of the manufacturer's recommended pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to air inversions. In hand-gun applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). The use of a mistblower is not recommended.

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With aerial applications, use a drift control system such as Microfoil or Thru-Valve booms, or use Naico-Trol or Arborchem 38-F drift control additive or equivalent. Keep spray pressures low enough to provide coarse spray droplets. Spray boom should be no longer than $\frac{2}{3}$ of the rotor length. Do not use a thickening agent with the Microfoil or the Thru-Valve booms, or other systems that cannot accommodate thick sprays. Spray only when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to air inversions.

Under conditions which are conducive to evaporation (high temperatures and humidity), vapors from this product may injure susceptible crops growing nearby. Excessive amounts of this herbicide in the soil may temporarily inhibit seed germination and plant growth.

Mixing Directions

Crossbow in water forms an emulsion (not a solution), and separation may occur unless the spray mixture is agitated continuously.

Water Spray: Fill the spray tank about half full with clean water. Then add the Crossbow and complete filling the tank with agitation running. Mix thoroughly and continue moderate agitation while spraying.

Size of Sprayer (Gallons)	Amount of Crossbow Required for Spray Solution		
	1%	1.5%	4%
1	1 1/3 fl oz	2 fl oz	5 1/3 fl oz
3	4 fl oz	6 fl oz	1 pt
5	6 2/3 fl oz	10 fl oz	1 2/3 pt
50	2 qt	3 qt	2 gal
100	1 gal	1.5 gal	4 gal

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Approved Uses

Woody Plant Control

Note: For rangeland and pastures, the maximum application rate is 4 quarts per acre per application.

Easy-To-Control Species: 1.5 gal/acre broadcast application or 1 to 1.5% solutions for high-volume foliar applications.

alder	dogwood	sumac
ash	elderberry	sycamore
beech	nawthorn	tamarack
birch	honeysuckle	tanoak
blackberry	maples (except	wax myrtle
black locust	bigleaf and vine †)	(top growth)
boneset	multiflora rose	wild grape
cascara	poison oak	willow
<i>Ceanothus</i> spp	poison ivy	white oak
cherry (except	sassafras (top growth)	
black)	scotch broom	
cottonwood		

†basal or dormant stem application only

Harder-To-Control Species: High-volume applications, 1.5% solution, conventional basal or dormant stem applications are recommended. A broadcast rate of 2 to 4 gal/acre will increase the degree of control of these species. See grazing restrictions when rates of application greater than 1.5 gal/acre are used.

buckbrush (<i>Symphoricarpos</i> spp.)	Russian olive
(suppression)	salmonberry
common persimmon	(suppression)
(suppression)	sweetgum
elm (except winged elm)	trumpet creeper
hazel	(suppression)
honeylocust (suppression)	Virginia creeper
pine (suppression)	(suppression)

High Volume Foliar Applications Through Handguns: Using a power or hand pressured spray-gun, apply a foliar wetting spray containing 1 to 1 1/2 gallons of this product in sufficient water to make 100 gallons of total spray mix. See mixing chart under "Mixing Directions" for preparing small amounts of this 1 to 1.5% spray mix.

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Spray to give thorough coverage of the foliage, wetting all leaves and green stems to the drip point. Depending on the plant size and foliage density, the total amount of required spray is usually 100 to 200 gallons per sprayed acre.

For best results, applications should be made when woody plants are actively growing. This is most likely to occur for a period after full leaf in the spring to early summer when moisture and temperature are favorable. For multiflora rose control, the best time for treatment may be expected during the early to mid-flowering stage.

The required spray volume will increase substantially if the brush exceeds 5 feet in height. Brush over 8 feet tall is difficult to treat efficiently. Large brush or trees may be controlled better by basal or mechanical methods.

Foliar Broadcast Sprays (Ground Equipment and Helicopter): Apply 1.5 to 4 gallons of this product in enough water to deliver 10 to 30 gallons total spray per acre. Use a boom type or other broadcast spray equipment that provides uniform spray coverage over the top of the foliage and make applications when plants are growing well. The favorable period for treatment is most likely to occur after full leaf in the spring and continue into early summer, depending on soil moisture and other conditions. Follow-up treatment with foliar high-volume or basal type treatments may be needed, especially if treating under less favorable conditions.

Aerial Application (Helicopter only): Use Nalco-Trol or equivalent drift control additive as recommended by the manufacturer or the Microfoil boom, Thru-Valve boom, or equivalent drift control system. Thickened sprays prepared by using high viscosity invert systems or other drift reducing systems may be utilized if they control spray drift as well as Nalco-Trol or the above mentioned booms. If a spray thickening agent is used, follow all recommendations and precautions on the product label. Do not use a thickening agent with the Microfoil or Thru-Valve booms or other systems that cannot accommodate thick sprays.

Dormant Stem Applications: To control susceptible woody species such as multiflora rose and blackberry, mix 1 to 4 gallons of this product in diesel oil, No. 1 or No. 2 fuel oil or kerosene to make 100 gallons of spray and apply to thoroughly wet upper and lower stems including the root

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collar and any ground sprouts. Treat at any time when the brush is dormant and the bark is dry. Best results have been obtained with late winter to early spring applications. Do not treat when snow or water prevent spraying to the groundline. For the most susceptible woody species such as blackberries, substitute other diluents or oils only in accordance to manufacturer's recommendations. Apply mixture to thoroughly wet upper and lower stems as described above. The more tolerant species may require total oil carrier for better control. Brush over 8 feet in height is difficult to treat efficiently. Basal or mechanical methods may be better suited for control of large trees.

Conventional Basal Bark and Stump Applications: For control of susceptible woody plants and to prevent or control regrowth from cut stumps, mix 4 gallons of this product in diesel oil, No. 1 or No. 2 fuel oil or kerosene to make 100 gallons of spray mixture. Spray the basal parts of brush or trees to a height of 15 to 20 inches from the ground. Thoroughly wet all the basal bark area including crown buds and ground sprouts. Spray runoff should visibly wet the ground at the base of the stems or trunks. Basal and cut stump applications can be made at any time of the year except when snow or water prevent spraying to the groundline. Best results have been obtained with winter to early spring applications. Basal treatments are less effective on trees with diameters larger than 6 to 8 inches. For better regrowth control, cut the larger trees and treat the stumps. Treat stumps the same as the trunks and also treat the freshly cut surface. The cambium layer just inside the bark is the most important area of the cut surface to treat.

Thinline Basal Applications: For the control of small multiflora rose, apply a horizontal thin line of undiluted herbicide across all the stems at a height where the stems are less than 1/2 inch in diameter and have thinner bark to penetrate. For bushes with large numbers of stems (over 3 or 4), coverage may be difficult. Basal bark or dormant stem applications may be more effective. Treat when the bark is dry and rain is not forecasted. Best time for multiflora rose control using this application method is during early spring to early summer, when the plants are just about breaking dormancy to actively growing. Apply approximately 20 ml undiluted product per bush. Wherever a stem over 1/2 inch in diameter is treated, it should be completely ringed with herbicide to

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obtain best results. Additional herbicide is likely to be needed for adequate coverage of these larger stems in a bush or clump

Old stems with thickened bark require more herbicide than young stems with thin bark. Where regrowth is treated, better root kill may result if resprouts are treated after they are one year old and the bark has lost its green color, but before sprouts reach one inch in diameter.

General Weed Control (See Table)

Broadcast Treatment (Ground Equipment and Helicopter): Use up to 1 1/2 gallons of Crossbow per acre in enough water to deliver 10 to 30 gallons of total spray per acre. Apply when weeds are actively growing. Best time for treatment of biennial and winter annual weeds is when the plants are in the rosette stage. Treat when plants are actively growing. Re-treatment of hard-to-control weeds such as field bindweed, chicory, dogfennel, goldenrod, horsenettle, kudzu, milkweed, perennial sowthistle, leafy spurge, and Canada thistle may be necessary. See recommendations regarding the use of drift control additives as listed in the "General Use Precautions" section under "Avoid injurious spray drift"

Spot Treatment: To control broadleaf weeds in small areas with a hand sprayer, use 4 to 6 fl oz of Crossbow in 3 gallons of water and spray to thoroughly wet all foliage.

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General Weed Control

High-Volume Foliar Treatment or Spot Treatment			
1% Solution	1% Solution	1 to 1.5% Solution	1.5% Solution
Foliar Broadcast Applications			
1 q/acre	2 q/acre	2 - 4 q/acre	4 q/acre
blueweed (B) buttercup, annual (A) horseweed, (marshall) (A) lambsquarters, common (A) mustard, wild (A) ragweed, common (A) spurge, thyme-leaf (A)	bedstraw, annual (A) bluebur (A) burdock (B) clover, white sweet (B) clover, bur (A) cocklebur (A) croton, wooly (A) dogbane, hemp (P) (TG) ironweed, tall (P) lettuce, wild (A,WA) mustard, tansy (WA) radish, wild (A) ragwort, tansy (B) shepherd's purse (WA)	amaranth, spiny (A) buttercup, tall (P) chickweed, mouseear (P) clover, white (P) dandelion (P) dock, curly (P) gainsoga hairy (A) goatsbeard (A B) henbit (B,WA) ironweed, western (P) ivy, ground (P) kochia (A) lespedez (A) oxalis (P) pennycress, field (WA) pepperweed, field (A B)	birdweed, field (P) (TG) carrot, wild (B) chicory (P) suppression cinqufoil (A B,P) dogfennel (P) suppression fleabane, annual (A,B) goldenrod (P) (TG) horsenettle (P) kudzu (P) (TG) marshelder (A) milkweed (P) suppression pepperweed, perennial (P) pokeweed (P) sesbana, hemp (A) sowthistle, perennial (P) (TG) spurge, lealy (P) (TG)

(A) Annual (B) Biennial (WA) Winter Annual (P) Perennial
 (TG) Top growth control only. Repeat treatment may be necessary.
 Note: Best time for treatment of biennial and winter annuals is when plants are in the rosette stage.

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General Weed Control (Cont.)

High-Volume Foliar Treatment or Spot Treatment			
1% Solution	1% Solution	1 to 1.5% Solution	1.5% Solution
Foliar Broadcast Applications			
1 qt/acre	2 qt/acre	2 - 4 qt/acre	4 qt/acre
		pigweed redroot (A) plantain broadleaf (P) plantain narrow leaf (P) purslane annual (A) sneezeweed bitter (A) sowthistle annual (A) sunflower (A) thistle Russian (A) vetch (P) violet wick (P) wormwood biennial (B) yellow rocket (P/B)	thistle bull (B) thistle Canada (P) (TG) thistle musk (nodding) (B) yarrow (P)

(A) Annual (B) Biennial (WA) Winter Annual (P) Perennial
 (TG) Top growth control only Repeat treatment may be necessary

Note: Best time for treatment of biennial and winter annuals is when plants are in the rosette stage

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Use in Liquid Nitrogen Fertilizer: Crossbow may be combined with liquid nitrogen fertilizer suitable for foliar application to accomplish weeding and feeding of grass pastures in one operation. Use Crossbow in accordance with recommendations for grass pastures as given on this label. Use liquid fertilizer at rates recommended by supplier or Extension Service Specialist. Test for mixing compatibility using desired procedure and spray mix proportions in clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations. **Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of compatibility aid.** Premixing Crossbow with 1 to 4 parts water may help in difficult situations.

Fill the spray tank about half full with the liquid fertilizer, then add the herbicide with agitation and complete filling the tank with fertilizer. Apply immediately and continue agitation in the spray tank during application. **Do not store spray mixture.** Application during very cold weather (near freezing) is not advisable.

Note: Do not use spray equipment for other applications to land planted, or to be planted to susceptible crops or desirable plants, unless it has been determined that all phytotoxic herbicide residue has been removed by thorough cleaning of the equipment.

Conservation Reserve Program (CRP) For Established Permanent Grass Stands

Use Crossbow on CRP acres only when the perennial grasses are established. Conditions that stress grasses, such as drought, will increase potential for injury to the grasses.

Restrictions: Do not graze on crop treated acres for at least one year after last treatment. After that time period, follow local (CRP) guidelines regarding cropping and haying restrictions. Do not use Crossbow if legumes are a desired cover crop during CRP. Do not use on bentgrass or newly seeded grass.

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Broadcast Application (Ground or Aerial): Apply 1 to 2 quarts of Crossbow for small weed control or up to 1.5 gallons of Crossbow for deep-rooted perennial and susceptible woody species control using enough water to deliver 10 or more gallons of total spray volume per acre.

Follow precautions and recommendations outlined under Foliar Low-Volume Broadcast Applications.

For basal and dormant brush treatments, follow application directions listed in "Woody Plant Control".

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.

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 temperature, 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.

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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 paid 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 the "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.

