



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

JAN 27 1994

Larry E. Hammond  
DOWELANCO  
Quad IV 9002 Purdue Rd  
Indianapolis, IN 46268

**OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES**

**Subject: Label Amendment Submission of 07/08/93 in Response to PR Notice 93-7  
EPA Reg. No. 62719-48  
CURTAIL HERBICIDE**

**Dear Registrant:**

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

**WHAT THIS ACCEPTANCE MEANS:**

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

**WHAT YOU NEED TO DO NEXT:**

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- **BEFORE** selling or distributing any product bearing the final printed labeling
- AND**
- **WITHIN** one year from date of this acceptance.



**Recycled/Recyclable**  
Printed with SoyCanada Ink on paper that  
contains at least 50% recycled fiber

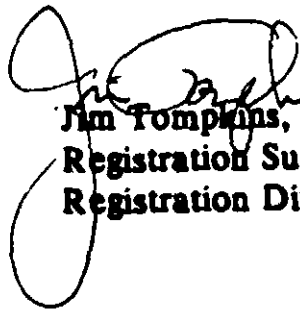
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs (7505C)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)  
Office of Pesticide Programs  
Room 266A, Crystal Mall 2  
1921 Jefferson Davis Highway  
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief  
Registration Support Branch  
Registration Division (7505W)

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division

Larry E. Hammond  
DOWELANCO  
QUAD IV 9002 PURDUE RD  
INDIANAPOLIS IN 46268

Subject: Label Amendment Submission of 07/08/93  
to Comply with WPS Labeling Requirements  
EPA Reg Nr. 62719-48  
CURTAIL HERBICIDE

The following specific comments pertain to your  
WPS labeling submission concerning the product  
cited above:

EPA has determined that a "closed" mechanical transfer system is not required for 2,4,-D products. In the personal protective equipment section of your amended labeling, you may revise the statement to read as follows:

CONTAINERS GREATER THAN 1 GALLON BUT LESS THAN 5 GALLONS:  
"Mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear coveralls or a chemical-resistant apron in addition to the other required PPE."

EPA has determined that a "closed" mechanical transfer system is not required for 2,4-D products. In the personal protective equipment section of your amended labeling, you may revise the statement to read as follows:

CONTAINERS 5 GALLONS OR MORE: "A mechanical system (probe and pump) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4)], the handler PPE requirements may be reduced or modified as specified in the WPS."

Add the following sentence to the paragraph on laundering PPE: "After each day of use, clothing or PPE must not be reused until it has been cleaned." Please refer to the special 2,4-D guidance issued by EPA on September 13, 1993 (page 4) for placement of the sentence.

**DOWELANCO**

**EPA Reg. Number: 62719-48**

**CURTAIL HERBICIDE**

**Application date: 07/08/93**

**Original Submission**

Please conform with the special 2,4-D guidance issued by EPA on September 13, 1993 for adding WPS statements.

The statement on your proposed label that references the Agricultural Use Requirements box in your proposed supplemental labeling contains incorrect language. Use the exact text and placement of the referral statement as shown on page 43 in Supplement Three to PR Notice 93-7.

Labeling amended to meet the requirements of the Worker Protection Standard (WPS) and 2,4-D Exposure Reduction Program

(Editor's Note: Deleted text indicated by strike-through and added text underlined)

[Base Label of Datapack -- Curtail]

(logo) DowElanco

ACCEPTED  
with COMMENTS  
In EPA Letter Dated  
JAN 27 1994

# Curtail\*

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. <sup>62719-48</sup>

For selective control of broadleaf weeds in wheat and ~~barley~~ ~~not underseeded~~ with a legume, fallow cropland, grasses grown for seed, rangeland and permanent grass pastures, conservation reserve program (CRP) acres and non-cropland

Active Ingredients:

clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid, alkanolamine salts of the ethanol and isopropanol series .....	7.5%
2,4-dichlorophenoxyacetic acid, trisopropanolamine salt† .....	38.4%
Inert Ingredients .....	54.1%

Acid Equivalents:

3,6-dichloro-2-pyridinecarboxylic acid - 3.9% - 0.38 lb/gal  
2,4-dichlorophenoxyacetic acid - 20.9% - 2.0 lb/gal  
†Isomer Specific by AOAC Method No. 978.05 (15th Ed.)

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## Precautionary Statements

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

### DANGER PELIGRO:

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.)

Causes Eye Damage And Skin Irritation • Harmful If Swallowed

~~Do not get in eyes, on skin, or on clothing. When mixing, loading or applying this product, or repairing or cleaning equipment used with this product, wear eye protection (face shield or safety glasses), chemical resistant gloves, long-sleeved shirt, long pants, socks and shoes. It is recommended that safety glasses include front, brow and temple protection. For aerial applicators in an enclosed cockpit and applicators applying this product from a tractor that has a completely enclosed cab, eye protection is not required.~~

~~Wash hands, face and arms with soap and water as soon as possible after mixing, loading or applying this product. Wash hands, face and arms with soap and water before eating, smoking or drinking. Wash hands and arms before using the toilet.~~

~~After work, remove all clothing and shower using soap and water. Do not reuse clothing worn during previous days mixing, loading or application of this product. Clothing must be kept and washed separately from other household laundry. Remove saturated clothing as soon as possible and shower.~~

~~(Editor's note: The above personal hygiene statements were incorporated into User Safety Recommendations)~~

**Note:** For containers of over 1 gallon, but less than 5 gallons: Persons engaged in pouring this product must also wear coveralls or chemical-resistant apron.

For containers of 5 gallons or more: A mechanical transfer system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

*(Editor's note: The two statements immediately above have been incorporated into the "PPE" and "Engineering Controls" sections.*

### Personal Protective Equipment (PPE)

Applicators and other handlers, including persons repairing or cleaning equipment, must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks
- Protective eyewear such as face shield or safety glasses (brow and temple protection recommended). Eye protection is not required for ground or aerial applicators in completely enclosed cabs or cockpits.

- Note: For containers of over 1 gallon, but less than 5 gallons: Persons engaged in pouring this product must wear coveralls or a Chemical-resistant apron.

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.

### Engineering Controls Statements:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

For containers of 5 gallons or more: A mechanical transfer system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

### User Safety Recommendations

Users should:

- Wash hands, face and arms with soap and water as soon as possible after mixing, loading or applying this product and before eating, smoking or drinking. Wash hands and arms before 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. After work, remove all clothing, shower using soap and water and change into clean clothing. Launder clothing worn during mixing, loading, application or cleaning and repairing equipment before reuse.

### **First Aid**

**If in eye:** Flush with plenty of water for at least 15 minutes. Get medical attention.

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation persists.

**If swallowed:** Induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Do not induce vomiting or give anything by mouth to an unconscious person.

### **Environmental Hazards**

Drift or runoff may adversely affect non-target 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.

**BEST AVAILABLE COPY**

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils containing sinkholes over limestone bedrock, severely fractured surfaces, and substrates which would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

**Refer to label booklet for additional precautionary information including Personal Protective Equipment (PPE), and Directions for Use including Agricultural Use Requirements and 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. 62719-48  
08103

EPA Est. 464-MI-1  
900-00xxxx

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DowElanco • Indianapolis, IN 46268, U.S.A.

## Herbicide

{Label Booklet}

(logo) DowElanco

# Curtail\*

For selective control of broadleaf weeds in wheat and barley not underseeded with a legume, fallow cropland, grasses grown for seed, rangeland and permanent grass pastures, conservation reserve program (CRP) acres and non-cropland

**Active Ingredients:**

clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid, monoethanolamine salt .....	7.5%
2,4-dichlorophenoxyacetic acid, trisopropanolamine salt† .....	38.4%

Inert Ingredients .....	54.1%
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**Acid Equivalents:**

3,6-dichloro-2-pyridinecarboxylic acid - 3.9% - 0.38 lb/gal
2,4-dichlorophenoxyacetic acid - 20.9% - 2.0 lb/gal

†Isomer Specific by AOAC Method No. 978.05 (15th Ed.)

### Keep Out of Reach of Children

### DANGER PELIGRO:

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.)

Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE), and Directions for Use including Agricultural Use Requirements and 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. 62719-48  
08103

EPA Est. 464-MI-1  
900-00xxxx

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### Herbicide

**BEST AVAILABLE COPY**



[Page 2 of Booklet]

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## Precautionary Statements

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### Hazards to Humans and Domestic Animals

#### **DANGER PELIGRO:**

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.)

#### Causes Eye Damage And Skin Irritation • Harmful If Swallowed

~~Do not get in eyes, on skin, or on clothing. When mixing, loading or applying this product, or repairing or cleaning equipment used with this product, wear eye protection (face shield or safety glasses), chemical resistant gloves, long-sleeved shirt, long pants, socks and shoes. It is recommended that safety glasses include front, brow and temple protection. For aerial applicators in an enclosed cockpit and applicators applying this product from a tractor that has a completely enclosed cab, eye protection is not required.~~

~~Wash hands, face and arms with soap and water as soon as possible after mixing, loading or applying this product. Wash hands, face and arms with soap and water before eating, smoking or drinking. Wash hands and arms before using the toilet.~~

~~After work, remove all clothing and shower using soap and water. Do not reuse clothing worn during previous days mixing, loading or application of this product. Clothing must be kept and washed separately from other household laundry. Remove saturated clothing as soon as possible and shower.~~

~~(Editor's note: The above personal hygiene statements were incorporated into User Safety Recommendations)~~

~~Note: For containers of over 1 gallon, but less than 5 gallons: Persons engaged in pouring this product must also wear coveralls or chemical resistant apron.~~

~~For containers of 5 gallons or more: A mechanical transfer system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.~~

~~(Editor's note: The two statements immediately above have been incorporated into the "PPE" and "Engineering Controls" sections.~~

#### Personal Protective Equipment (PPE)

Applicators and other handlers, including persons repairing or cleaning equipment, must wear:

- Long-sleeved shirt and long pants
- Water proof gloves
- Shoes plus socks
- Protective eyewear such as face shield or safety glasses (brow and temple protection recommended).  
Eye protection is not required for ground or aerial applicators in completely enclosed cabs or cockpits.

- Note: For containers of over 1 gallon, but less than 5 gallons: Persons engaged in pouring this product must wear coveralls or a Chemical-resistant apron.

**BEST AVAILABLE COPY**

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.

#### **Engineering Controls Statements:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

For containers of 5 gallons or more: A mechanical transfer system (probe and pump) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

#### **User Safety Recommendations**

Users should:

- Wash hands, face and arms with soap and water as soon as possible after mixing, loading or applying this product and before eating, smoking or drinking. Wash hands and arms before 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. After work, remove all clothing, shower using soap and water and change into clean clothing. Launder clothing worn during mixing, loading, application or cleaning and repairing equipment before reuse.

#### **First Aid**

**If in eyes:** Flush with plenty of water for at least 15 minutes. Get medical attention.

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation persists.

**If swallowed:** Induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Do not induce vomiting or give anything by mouth to an unconscious person.

#### **Environmental Hazards**

Drift or runoff may adversely affect non-target 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 wastewaters.

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils containing sinkholes over limestone bedrock, severely fractured surfaces, and substrates which would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

**BEST AVAILABLE COPY**

## 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.

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.

### 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 exemptions 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 48 hours.

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
- Waterproof gloves
- Shoes plus socks
- Protective eyewear

### Storage and Disposal

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

**Storage:** Store above 40°F or warm and 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.

**Container Disposal (Metal):** 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.

**Container Disposal (Plastic):** 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.

**General:** Consult federal, state, or local disposal authorities for approved alternative procedures.

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## **General Information**

Curtail herbicide is recommended for selective, postemergence control of broadleaf weeds in wheat and barley not underseeded with a legume, fallow cropland (including summer fallow, post-harvest, and set-aside acres) rangeland and permanent grass pastures, land in the Conservation Reserve Program (CRP) and non-cropland.

### **General Use Precautions**

Apply only once per 12-month period, except for grass grown for seed (see Directions for Use). A fallow treatment that precedes or follows a small grain application is also allowed.

This product can affect susceptible broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Therefore, do not apply Curtail directly to or allow spray drift to come in contact with vegetables, flowers, grapes, tomatoes, potatoes, beans, lentils, peas, alfalfa, sunflowers, soybeans, safflower, or other desirable broadleaf crops and ornamental plants or soil where these sensitive crops will be planted the same season.

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

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

Do not contaminate irrigation ditches or water used for irrigation or domestic purposes.

Residues of Curtail in treated plant tissue, including the treated crop or weeds, which has not decayed may affect succeeding susceptible crops.

### **Rotational Crop Restrictions**

**(All States Except Idaho, Nevada, Oregon, Utah and Washington)**

Do not plant wheat, barley, oats, grasses, and corn within 30 days after an application of Curtail.

Do not plant sugar beets (including beets grown for seed) in the same growing season following an application of Curtail.

Do not plant alfalfa, asparagus, canola, cole crops, grain sorghum, onions, popcorn, safflower, sweet corn, and strawberries for 12 months after an application of Curtail.

Do not plant dry beans, soybeans and sunflowers for 12 months after an application of Curtail, or 18 months if soils contain less than 2% organic matter and natural precipitation is less than 15 inches during the 12 months following treatment. For these areas see "Special Conditions" below.

To avoid potential phytotoxicity all other crops including peas, lentils, potatoes, and broadleaf crops grown for seed should not be planted for 18 months after treatment unless the risk of injury is acceptable.

**Special Conditions:** Curtail residues in plant tissues which have not completely decayed may affect succeeding susceptible crops. In areas defined previously as low in organic matter and precipitation, sensitive crops such as dry beans, soybeans, and sunflowers may be injured when planted 12 months after treatment. Unless the risk of injury is acceptable, these crops should not be planted until 18 months after treatment. The potential for injury may be reduced by burning, removal, or incorporation of treated crop residues with a minimum of 2 supplemental Fall irrigations.

**(Idaho, Nevada, Oregon, Utah and Washington Only)**

Do not plant wheat, barley, oats, grasses or field corn within 30 days after an application of Curtail.

Do not plant sugar beets (including beets grown for seed) in the same growing season following an application of Curtail.

Do not plant alfalfa, asparagus, canola (rapeseed), *Brassica* species grown for seed, cole crops, dry beans, soybeans, grain sorghum, mint, onions, popcorn, safflower, sunflower, sweet corn or strawberries during the first 12 months after an application of Curtail.

For areas receiving 18 inches or more of annual precipitation (not including irrigation): Alfalfa, asparagus, dry beans, canola (rapeseed), *Brassica* species grown for seed, grain sorghum, mint, onions, popcorn, sweet corn, soybeans, strawberries and sunflowers may be planted 12 months after an application of Curtail. Cole crops, lentils, peas, potatoes (including potatoes grown for seed), safflower or broadleaf crops grown for seed (excluding *Brassica* species) may also be planted 12 months after treatment, however, unless risk of injury is acceptable, these crops should not be planted until 18 months after treatment.

For areas receiving less than 18 inches average annual precipitation (not including irrigation): Alfalfa, dry beans, soybeans, sunflowers, lentils, peas, potatoes (including potatoes grown for seed) or broadleaf crops grown for seed (excluding *Brassica* species) should not be planted until 18 months after an application of Curtail. However, crop injury and/or yield loss may occur up to 4 years after application.

**Note:** The above restrictions are based on average annual precipitation, regardless of irrigation practices. Use of Curtail in accordance with the rotational crop restrictions stated, if followed, is not expected to result in crop injury; however, because Curtail is dissipated in the soil by microbial activity and the rate of microbial activity is dependent on soil moisture, temperature and organic matter, accurate prediction of potential rotational crop injury is impossible. In areas of low organic matter (<2.0%) and less than 15 inches average annual precipitation, potential for crop injury may be reduced by burning or removal of plant residues, supplemental fall irrigation and deep moldboard plowing prior to planting the sensitive crop.

#### **Avoid Spray Drift**

Applications should be made to avoid spray drift since very small quantities of the spray, which may not be visible, may severely injure susceptible crops during both growing and dormant periods. Use coarse sprays to minimize drift since, under adverse weather conditions, fine spray droplets may drift a mile or more. Fine droplets can present a drift hazard. A drift control or deposition agent such as Nalco-Trol may be used with this product to aid in reducing spray drift. If used, follow all use recommendations and precautions on the product label.

**Ground Application:** To minimize spray drift, apply Curtail in a total spray volume of 10 or more gallons per acre as a large-droplet, low pressure spray. Refer to manufacturer's recommendations for additional information on gallons per acre, spray pressure, sprayer speed, nozzle types and arrangements, nozzle heights above the target canopy, etc., for respective application equipment. Spot treatments should only be applied with a calibrated boom to prevent misapplication. With ground equipment, spray drift can be lessened by keeping the spray boom as low as possible; by applying no more than 20 gallons of spray per acre; by using no more than 30 pounds spraying pressure with large droplet-producing nozzle tips; by spraying when wind velocity is low; and by stopping all spraying when wind exceeds 6 to 7 miles per hour. Do not apply with hollow cone-type insecticide or other nozzles that produce a fine-droplet spray.

**Aerial Application:** With aircraft, drift can be lessened by applying a coarse spray; by using no more than 30 pounds spray pressure at the nozzles; by using straight-stream nozzles directed straight back; by using a spray boom no longer than 3/4 the wing span of the aircraft; and by spraying only when wind velocity is less than 6 mph.

Do not apply by aircraft when an air temperature inversion exists. Such a condition is characterized by little or no wind and with lower air temperature near the ground than at higher levels. The use of a smoke device on the aircraft or continuous smoke column at or near site of application will indicate air direction and velocity, and whether a temperature inversion is present, which is shown by layering of the smoke.

Do not move treated soil and avoid situations where treated soil particles may blow into areas where susceptible crops are grown. Violent windstorms may move soil particles. If this product is on soil particles and they are blown onto susceptible plants, visible symptoms may appear. Serious injury is unlikely. The hazard of movement of this product on dust is reduced if treated fields are irrigated or if rain occurs shortly after application.

Straw from treated areas, or manure from animals which have grazed treated areas, cannot be used for composting or mulching on ground where susceptible crops may be grown the following season. To promote herbicide decomposition, plant material should be evenly incorporated or burned.

Do not use in a greenhouse. Excessive amounts of this herbicide in the soil may temporarily inhibit seed germination or plant growth.

Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on this label.

**Pasture/Grazing/Haying Restrictions**

Do not transfer livestock from treated grazing areas onto sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture. Otherwise, urine may contain enough clopyralid to cause injury to sensitive broadleaf plants.

Do not use on newly seeded areas until grass is well established.

Do not use on bentgrass.

Note: Many forbs (desirable broadleaf forage plants) are susceptible to Curtail. Do not spray pastures containing desirable forbs, especially legumes, unless injury can be tolerated. However, the stand and growth of established perennial grasses is usually improved after spraying, especially when rainfall is adequate and grazing is deferred.

Do not use hay or straw from treated areas for composting or mulching on susceptible broadleaf crops.

Do not graze dairy cattle in treated areas for 14 days after application.

Remove meat animals from freshly treated areas 7 days before slaughter. Withdrawal is not needed if 2 weeks or more have elapsed since application.

Do not cut treated grass for hay within 30 days after application.

Mixing and Loading: Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-dichlorophenoxyacetic acid have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-dichlorophenoxyacetic acid 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.

**Broadleaf Weeds Controlled by Curtail**

alfalfa  
artichoke, Jerusalem  
buckwheat, wild  
buffalobur†  
burdock, common  
chamomile, false (scentless)  
chamomile, mayweed  
(dogfenel)  
clover, sweet

mustard, tumble (Jim Hill)  
mustard, wild  
nightshade, cutleaf  
nightshade, hairy  
pennycress, field (fanweed)  
pigweed, redroot  
pineappleweed  
plantain  
radish, wild

clover, red  
 cocklebur, common  
 coffeeweed  
 cornflower (bachelor button)  
 dandelion  
 dock, curly  
 flixweed†  
 groundsel, common  
 hawksbeard, narrowleaf  
 horseweed  
 jimsonweed  
 knapweed, diffuse  
 knapweed, Russian†  
 knapweed, spotted  
 kochia (2-4 leaf)†  
 ladythumb  
 lambsquarters, common  
 lettuce, prickly  
 locoweed, white  
 locoweed, Lambert  
 marshelder

ragweed, common  
 ragweed, giant  
 salsify, meadow (goatsbeard)  
 shepherdspurse  
 sicklepod  
 smartweed, Pennsylvania  
 sorrel, red  
 sowthistle, annual  
 sowthistle, perennial†  
 starthistle, yellow  
 sunflower, common  
 tansymustard, pinnate†  
 thistle, Canada  
 thistle, musk  
 thistle, Russian (1-3 leaf)  
 velvetleaf  
 vetch  
 volunteer beans  
 volunteer lentils  
 volunteer peas

†These weeds may only be suppressed. Suppression is a visual reduction in weed competition (reduced population or vigor) as compared to untreated areas. The degree of weed control and duration of effect will vary with weed size and density, spray rate and coverage, and growing conditions before, during and after the time of treatment. For perennial weeds, Curtail will control the initial topgrowth and inhibit regrowth during the season of application (season-long control). At higher rates shown on this label, Curtail may cause a reduction in shoot regrowth in the season following application; however, plant response may be inconsistent due to inherent variability in shoot regrowth from perennial root systems.

## **Application**

### **Timing**

Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. Only weeds which are emerged at the time of application will be affected. Wet foliage at the time of application may decrease control. The Curtail treatment will be rainfast within 6-8 hours after application.

### **Rate**

Generally, lower labeled application rates will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species, perennials and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds) the higher rates will be needed. Weeds in fallow or other areas where crop competition is not a factor will generally require higher rates to obtain control or suppression.

### **Coverage**

Adequate spray coverage and drift control are important. Obtaining a balance between spray coverage and drift control may sometimes be difficult but can be achieved, provided the applicator understands the factors affecting coverage and drift. Factors affecting spray coverage include spray volume, crop canopy and weed density. As crop canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Refer to manufacturer's recommendations for information on the relationship between gallons per acre, spray pressure, sprayer speed, nozzle type and arrangement, nozzle height above the target canopy, droplet size and drift potential for respective application equipment. Do not apply less than 2 and not more than 40 gallons per acre total spray volume. For best results, apply 5 or more gallons per acre by air and 10 or more gallons per acre by ground. Reducing total spray volume may result in decreased coverage and weed control. Use enough total spray volume and a delivery system to provide thorough coverage and a uniform spray pattern. Do not apply where spray drift may be a problem due to proximity of susceptible crops or other desirable plants.

### Use of Surfactants

Addition of wetting and/or penetration agents is not usually necessary when using Curtail; however, if a surfactant will be added to the spray solution, use a non-ionic surfactant approved for use in growing crops, such as X-77, of at least 80% active ingredient and do not exceed 4 pints per 100 gallons of spray solution (0.5% v/v). Adding a surfactant to the spray mixture may increase effectiveness on weeds but may reduce selectivity to the crop, particularly under conditions which promote plant stress.

### Use With Sprayable Liquid Fertilizer Solutions

Curtail is compatible with most non-pressurized liquid fertilizer solutions; however, if these solutions are to be sprayed with Curtail, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water source changes, or when tank mixture ingredients or concentrations are changed. A compatibility test is performed by pouring the spray components (in the desired order and proportions) into a clear glass jar before mixing in the spray tank. Use of a compatibility aid such as Unite or Compex may help obtain and maintain a uniform spray solution during mixing and application. Agitation in the spray tank must be vigorous to compare with jar test agitation. For best results, liquid fertilizer rates should not exceed 50% of the total spray volume. Premix Curtail with water and add to the liquid fertilizer/water mixture while agitating contents of the spray tank. Apply the spray the same day it is prepared while maintaining continuous agitation.

Note: Foliar-applied liquid fertilizers can cause yellowing or leaf burn of crop foliage.

### Approved Uses

#### Crop Uses

**Agricultural Use Requirements for Crops**  
For the following crop uses, follow PPE and Reentry instructions in the "Agricultural Use Requirements" section of this label.

#### Wheat and Barley

##### Timing

Apply Curtail in the spring to actively growing wheat or barley once 4 leaves have unfolded on the main stem and tillering has begun up to the jointing stage (first node of main stem detectable). To control or suppress weeds listed above, make application after maximum emergence of the target weeds but before they exceed 3 inches in height or diameter (for rosettes). To obtain season-long control of perennial weeds such as Canada thistle, apply after the majority of the weed's basal leaves have emerged from the soil, but before bud stage. A later timing of application (when the grain is between the jointing and boot stages) may be used to treat later-emerging weeds; however, do not apply unless the risk of injury is acceptable. Do not apply after the boot stage.

Note: Do not permit dairy animals or meat animals being finished for slaughter to forage or graze treated grain fields within 1 week after treatment. Do not harvest hay from treated grain fields.

##### Rate

Apply 2 to 2 2/3 pints of Curtail per acre. The higher rate may be used when the condition of the weeds and/or crop at the time of treatment may prevent optimum control.

Note: Higher rates of Curtail or any application of Curtail following a spring postemergence treatment with 2,4-D or MCPA, may increase the risk of crop injury.



**Tank Mixtures for Wheat and Barley**

This product may be tank mixed with the following herbicides for control of additional weeds in wheat and barley. Read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled and geographic and other restrictions. When tank mixing, use in accordance with the most restrictive of label limitations and precautions. No label dosages should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

Active ingredient	Product	Formulation	Amount of Product per Acre
bromoxynil†	Buctril	2 lb/gal	3/4 to 1 pt
chlorsulfuron	Glean	75% DF	1/8 to 1/3 wt oz
dicamba†,††	Banvel	4 lb/gal	1/8 to 1/4 pt
difenzoquat	Avenge	2 lb/gal	2 1/2 to 4 pt
diuron	Drex 4L	4 lb/gal	1 to 1 1/2 pt
	Diuron 4L		
	Diuron 80 WDG	80% DF	1/2 to 1 lb
	Diuron DF	80% WP	
MCPA or 2,4-D††		4 lb/gal	Up to 1/2 pt
metribuzin	Lexone DF	75% DF	2 1/2 to 4 wt oz
	Sencor DF		
metsulfuron methyl	Ally	60% DF	1/10 wt oz
terbutryn	Igran 80WP	80% WP	6 to 10 wt oz
tribenuron methyl and thifensulfuron methyl	Harmony Extra	75% DF	1/3 to 1/2 wt oz
tribenuron methyl	Express	75% DF	1/6 to 1/4 wt oz

†Buctril or Banvel tank mixes with Curtail may be useful in broadening the annual weed control spectrum but may reduce control of perennials, such as Canada thistle.

††Note: Do not tank mix Curtail with 2,4-D or dicamba unless the risk of crop injury is acceptable.

**Fallow Cropland**

**Timing**

Curtail can be applied either post-harvest, in the spring/summer (during fallow period) or to set-aside acres to control or suppress weeds listed above (refer to rotation restrictions). Apply to young, emerged weeds under conditions that promote active growth. For best results on tough perennial weeds such as Canada thistle, apply after the majority of the basal leaves have emerged, but before bud stage. Later applications may result in less consistent control. Extreme growing conditions (such as drought or near freezing temperatures) prior to, at, or following the time of application may reduce weed control.

For best results, wait 14 to 20 days after application before cultivating or fertilizing with shank-type applicators to allow for thorough translocation. To avoid potential phytotoxicity, allow at least 30 days after application before seeding to wheat, barley or grasses.

**Rate**

Apply 2-4 pints of Curtail per acre. Applications of Curtail to fallow cropland made either before or after an application to small grains in a 12 month period are restricted to 2 pints per acre. The lower rate should not be used in fallow cropland unless it is a part of a planned sequential treatment.

**Tank Mixtures For Fallow Cropland**

To improve control of certain broadleaf weeds, Curtail at 2 pints per acre may be applied with up to 1.5 lb ae per acre additional 2,4-D. When mixing, read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled and geographic and other restrictions. When tank mixing, use in accordance with the most restrictive of label limitations and precautions. No label doses should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

### Grasses Grown for Seed

#### Timing

Apply only to established grasses before the boot stage. Applications in the boot stage and beyond will result in increased injury. Do not apply to bentgrass unless injury can be tolerated. For control of late-emerging Canada thistle, a preharvest treatment may be made after grass seed is fully developed. Treatment of Canada thistle in the bud stage and later may result in less consistent control. Post-harvest fall treatments may be made to actively growing Canada thistle after the majority of basal leaves have emerged.

#### Rate

Use 2 to 4 pints of Curtail per acre for control of annual weeds and Canada thistle. The potential for crop injury exists due to the 2,4-D component of this product and must be balanced against the benefits of improved weed control. Potential for crop injury increases with higher rates. Re-treat as necessary, but do not exceed 4 pints per acre of Curtail per season.

#### Tank Mixtures for Grasses Grown for Seed

Curtail at 1 3/4 pt/acre may be tank mixed with Banvel or Buctril to improve the control of certain weeds. Refer to the small grains table for use rates and tank mix guidelines.

### Rangeland, Pasture and Non-crop Uses

**Use Requirements for Rangeland, Pasture and Non-cropland Areas: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is applied to rangeland, pasture or non-cropland areas.**

### Rangeland and Permanent Grass Pastures

Apply 2 to 4 quarts of Curtail per acre when weeds are actively growing. For weeds such as biennial thistles, spotted and diffuse knapweed, yellow starthistle and Canada thistle apply the 2 quart rate on light to moderate infestations under good growing conditions. Use 3 quarts per acre for dense infestations or under poor growing conditions such as drought. For control of Russian knapweed, apply 3-4 quarts per acre at the early bud to mid-flowering stage or on fall regrowth.

Note: Review "Pasture Restrictions" under "General Use Precautions".

### Conservation Reserve Program (CRP) For Seeding To Permanent Grasses Only

Do not use Curtail if legumes or bentgrass are a desired cover during CRP.

Do not plant broadleaf crops in treated areas until an adequately sensitive bioassay shows that no detectable clopyralid is present in the soil.

Conditions that stress grasses, such as drought, will increase potential for injury to the grass at all stages of growth. Do not use in newly seeded areas until grass is established.

#### Timing

Curtail can be applied when perennial grasses have become established (tillering, with at least 1.5 inches secondary roots, and good vigor). For control of weeds such as musk thistle, Canada thistle and knapweed (diffuse, spotted and Russian), apply to actively growing weeds after the majority of the basal leaves have emerged, but before bud stage. Later applications may result in less consistent control.

In fields with heavy weed density which are to be planted to CRP grasses, a pre-seeding application may be made. In general, cropland to be planted to CRP in the spring should be treated the previous fall and cropland to be planted to CRP in the fall should be treated the previous spring or summer. A pre-seeding Curtail treatment may cause visible injury and reduced seed production in some newly planted grass

stands, however, grass stand establishment should be improved because of reduced weed competition. Wait at least 30 days after Curtail treatment before seeding grasses.

**Rate**

Apply 2 to 4 quarts of Curtail per acre. Do not exceed 2 qt/acre for pre-seeding treatment.

**Non-Cropland**

Apply 2 quarts of Curtail per acre when weeds are actively growing. Where Canada thistle or knapweed (spotted or diffuse only) is the primary pest, best results are obtained by applying Curtail when the majority of basal leaves have emerged, but before bud stage. Later applications may result in less consistent control.

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**Warranty Disclaimer**

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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**

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It is impossible to eliminate all risks associated with use of this product. Crop 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**

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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 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.

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**Revisions:**

- 1) Added requirements of the Worker Protection Standard
- 2) Added requirements to comply with the 2,4-D Exposure Reduction Program.
- 3) Label formatted to be compatible with requirements of the 2,4-D Exposure Reduction Program and Worker Protection Standard.