

62719-86

7-23-2008

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U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7505P)  
Ariel Rios Building  
1200 Pennsylvania Ave., NW  
Washington, D.C. 20460

EPA Reg. Number:  
62719-86

Date of Issuance:  
JUL 23 2008

NOTICE OF PESTICIDE:  
 Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Name of Pesticide Product:  
Curtail M

Name and Address of Registrant (include ZIP Code):

Dow AgroSciences LLC  
9330 Zionsville Rd  
Indianapolis, IN 46268

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is reregistered in accordance with FIFRA sec. 4(g)(2)(C) provided that you:

- 1) Submit and/or cite all data required for registration/reregistration review of your product when the Agency requires all registrants of similar products to submit data.
- 2) Per the acute toxicity review, the Agency recommends that the First Aid statements be placed on the label in the following order:  
"IF SWALLOWED:..."  
IF ON SKIN OR CLOTHING:..."  
IF INHALED:..."  
IF IN EYES:..."

Signature of Approving Official:

*Joanne I. Miller*

Joanne I. Miller  
Product Manager 23  
Herbicide Branch  
Registration Division (7505P)

Date:

JUL 23 2008

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3) A Note to Physician must be added to the label and must read:

“Note to Physician May pose an aspiration pneumonia hazard. Contains petroleum distillate.”

4) Per the acute toxicity review, chemical-resistant gloves are required for all handlers. The text “...when mixing, loading, or using any hand-held equipment” must be deleted from the glove statement in the handler PPE section. The superscript “2” must be deleted from the respirator text (“...a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N<sup>2</sup>...”) Per the Label Review Manual (Page 10-8), “if oil is present at any level in the pesticide itself or in the mixture of pesticide with water, solvent, fertilizer, adjuvants, etc. added to the crop, and if a respirator is required, then only an R- or P- series respirator may be used; an N-series respirator may only be used when there is no oil involved.” You should confirm what is the appropriate series respirator for your product.

5) Per the RED label table, the text in **bold type** below must be added to the following User Safety Requirements:

“...If no such instructions for washables **exist**, use detergent and hot water...”

6) The text “This pesticide may be toxic to fish, aquatic invertebrates and aquatic plants” as originally required in the RED is not needed for MCPA.

7) Per Page 87 of the MCPA RED, the REI for products that contain the ester form of MCPA is 12 hours. The REI should be changed from 48 hours to 12 hours.

Per Page 87 of the RED, the early entry glove statement should be revised to read “Chemical-resistant gloves made of any waterproof material.”

8) To the Warranty section add “to the extent consistent with applicable law” in front of “Dow AgroSciences makes no other express”.

Submit one copy of the revised final printed label for the record.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

If you have any questions please call Erik Kraft at 703-308-9358 or email at Kraft.Erik@epa.gov.

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(Base label):

(Logo) Dow AgroSciences

# Curtail®\* M Herbicide

**For selective control of broadleaf weeds in wheat, barley, oats and flax not underseeded with a legume, fallow cropland, grasses grown for seed, rangeland, permanent grass pastures, and Conservation Reserve Program (CRP) acres.**

**Active Ingredient(s):**

clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid.....	5.0%
MCPA-EHE: 2-methyl-4-chlorophenoxyacetic acid, 2-ethylhexyl ester.....	43.4%
Other inert Ingredients.....	51.6%
Total.....	100.0%

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

JUL 23 2008

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

12719-86

Contains Petroleum Distillates

**Acid Equivalents:**

- clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid - 5.0% (0.42 lb/gal)
- MCPA: 2-methyl-4-chlorophenoxyacetic acid - 27.8% (2.35 lb/gal)

**Keep Out of Reach of Children**

## 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.)

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### Precautionary Statements

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#### Hazards to Humans and Domestic Animals

**Causes Moderate Eye Irritation • Harmful If Swallowed, Inhaled, Or Absorbed Through Skin**

**Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.**

#### 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 B on an EPA chemical resistance category selections chart.

**Mixers, loaders, applicators, flaggers and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Butyl Rubber when mixing, loading, or using any hand-held equipment
- Shoes plus socks

**Additional PPE requirements for mixers and loaders supporting aerial application to rangelands, pasture lands, or noncropland. These mixers/loaders also must wear:**

- a chemical-resistant apron

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- a NIOSH-approved respirator with a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N<sup>2</sup>, R, P or HE filter.

See Engineering Controls for additional requirements.

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 enclosed cabs, or aircraft in a manner that Pilots must use an enclosed cockpit 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.

### **User Safety Recommendations**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE 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**

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**If swallowed:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

### **Environmental Hazards**

This pesticide may be toxic to fish, aquatic invertebrates and aquatic 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 cleaning equipment or disposing of equipment washwaters. **Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.**

MCPA has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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.

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### **Physical or Chemical Hazards**

**Combustible.** Do not use or store near heat or open flame.

### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information 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 using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at [www.dowagro.com](http://www.dowagro.com).

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

EPA Reg. No. 62719-86

EPA Est. \_\_\_\_\_

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Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

**Herbicide**

**Net Contents** \_\_\_\_\_

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(cover):

(Logo) Dow AgroSciences

# Curtail<sup>®\*</sup> M Herbicide

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clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid.....	5.0%
MCPA-EHE: 2-methyl-4-chlorophenoxyacetic acid, 2-ethylhexyl ester.....	43.4%
Other Inert Ingredients.....	51.6%
Total.....	100.0%

Contains Petroleum Distillates

Acid Equivalents:

    clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid - 5.0% (0.42 lb/gal)  
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**Refer to label booklet for additional precautionary information and Directions for Use.**

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EPA Reg. No. 62719-86

EPA Est. \_\_\_\_\_

<sup>®\*</sup>Trademark of Dow AgroSciences LLC  
Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

**Herbicide**

**Net Contents** \_\_\_\_\_

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## Precautionary Statements

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### Hazards to Humans and Domestic Animals

# CAUTION

**Causes Moderate Eye Irritation • Harmful If Swallowed, Inhaled, Or Absorbed Through Skin**

**Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.**

### 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 B on an EPA chemical resistance category selections chart.

#### Mixers, loaders, applicators, flaggers and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Butyl Rubber when mixing, loading, or using any hand-held equipment
- Shoes plus socks

#### Additional PPE requirements for mixers and loaders supporting aerial application to rangelands, pasture lands, or noncropland. These mixers/loaders also must wear:

- a chemical-resistant apron
- a NIOSH-approved respirator with a dust/mist filter with MSHA/NIOSH approval number prefix TC-21C or any N<sup>2</sup>, R, P or HE filter.

See Engineering Controls for additional requirements.

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 enclosed cabs, or aircraft in a manner that~~ Pilots must use an enclosed cockpit 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.

### User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE 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

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.



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**If swallowed:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

### **Environmental Hazards**

This pesticide may be toxic to fish, aquatic invertebrates and aquatic 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 cleaning equipment or disposing of equipment washwaters. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

MCPA has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

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.

### **Physical or Chemical Hazards**

**Combustible.** Do not use or store near heat or open flame.

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### **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.

**Use Restrictions in the State of New York:** Sale and use of this product in Suffolk and Nassau counties in the state of New York is prohibited. Use of this product in the state of New York is limited to postemergence application with a maximum use of 18.9 fl oz (0.062 lb of clopyralid) per acre per year providing that no other product containing clopyralid has been applied pre-plant or post-plant.

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 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 48 hours.

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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
- Chemical-resistant gloves such as Barrier Laminate or Butyl Rubber
- Shoes plus socks
- Protective eyewear

### **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.

**Entry Restrictions for Non-WPS Uses:** When applied to rangeland, permanent pastures, and non-cropland areas, keep unprotected persons out of treated areas until sprays have dried.

## Storage and Disposal

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

**Pesticide Storage:** Store above 10°F or warm and agitate before use.

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

**Metal Container Disposal: Do not reuse container.** 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 and local authorities.

**Plastic Container Disposal: Do not reuse container.** Triple rinse (or equivalent). Then offer for recycling, or reconditioning, or 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 Information

Curtail® M herbicide is recommended for selective control of broadleaf weeds in wheat, barley, oats and flax not underseeded with a legume, fallow cropland (including summer fallow, post-harvest, and set-aside acres), grasses grown for seed, rangeland, permanent grass pastures, and Conservation Reserve Program (CRP) acres.

### Precautions and Restrictions

- Use directions in Dow AgroSciences supplemental labeling may supersede directions or limitations in this labeling.
- Do not exceed a cumulative amount of 0.25 lb active ingredient (a.i.) of clopyralid per acre per single crop year except in the state of New York (see New York Restrictions above).
- Do not contaminate irrigation ditches or water used for irrigation or domestic purposes.
- Do not use in greenhouses.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- Many forbs (desirable broadleaf forage plants) are susceptible to Curtail M. 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 on newly seeded areas until grass is well established as indicated by vigorous growth and development of tillers and secondary roots.
- Do not use on bentgrass.
- Apply only once per crop cycle, except for grasses grown for seed (see specific use directions).
- **Grazing Restriction for Rangeland and Grass Pastures:** Do not forage or graze meat animals on treated areas within 7 days of slaughter. Do not forage or graze dairy animals on treated areas within 7 days after treatment.
- **Do not transfer livestock** from treated grazing areas (or feeding of treated hay) to sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture (or feeding of treated hay). If livestock are transferred within less than 7 days of grazing untreated pasture or eating untreated hay, urine and manure may contain enough clopyralid to cause injury to sensitive broadleaf plants.
- **Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample field conditions such as soil texture, soil pH, drainage, and any other variable that could affect the seed bed of the new crop. The field bioassay can be initiated at any time between harvest of the treated crop and the

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planting of the intended rotational crop. Observe the test crop for herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the test rotational crop; plant only a labeled crop or crop listed in the table below for which the rotational interval has clearly been met.

**Crop Rotation Intervals**

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

**Crop Rotation Intervals for All States Except Idaho, Nevada, Oregon, Utah and Washington**

**Note:** Numbers in parenthesis and † refer to footnotes following tables.

Rotation Crops (1)	Rotation Interval † (Soils greater than 2% organic matter AND rainfall more than 15 inches during 12 months following application)	Rotation Interval † (Soils less than 2% organic matter AND rainfall less than 15 inches during 12 months following application)
barley, field corn, grasses, oats, wheat	30 days	30 days
canola (rapeseed), flax, sugar beets	5 months	5 months
alfalfa, asparagus, cole crops, dry beans, grain sorghum, mint, onions, popcorn, safflower, soybeans, strawberries, sunflowers, sweet corn	10.5 months	18 months (2)
lentils, peas, potatoes (including potatoes grown for seed), and broadleaf crops grown for seed (excluding <i>Brassica</i> species)	18 months (2, 3)	18 months (2, 3)

1. A field bioassay is recommended prior to planting any broadleaf crops that are not listed. Do not rotate to unlisted crops prior to 10.5 months following application.
2. An 18-month crop rotation is recommended due to the potential for crop injury. **Note:** For these crops, a minimum 10.5 month rotation interval must be observed to avoid illegal residues in the harvested crop.
3. The potential for injury may be reduced by burning, removal, or incorporation of treated crop residues followed by a minimum of 2 supplemental fall irrigations.

**Crop Rotation Intervals for Idaho, Nevada, Oregon, Utah and Washington Only**

Rotation Crops (1)	Rotation Interval † (Soils greater than 2% organic matter AND rainfall more than 15 inches during 12 months following application)	Rotation Interval † (Soils less than 2% organic matter AND rainfall less than 15 inches during 12 months following application)
barley, field corn, grasses, oats, wheat	30 days	30 days
canola (rapeseed), flax, sugar beets	5 months	5 months
asparagus, <i>Brassica</i> species grown for seed, cole crops, grain sorghum, mint, onions, popcorn, strawberries, sweet corn	12 months	12 months
alfalfa, dry beans, soybeans, sunflowers	12 months	18 months (2)

lentils, peas, potatoes (including potatoes grown for seed), safflower, and broadleaf crops grown for seed (excluding <i>Brassica</i> species)	18 months (2)	18 months (2, 3)
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1. A field bioassay is recommended prior to planting any broadleaf crops that are not listed. Do not rotate to unlisted crops prior to 12 months following application.
2. An 18-month crop rotation is recommended due to the potential for crop injury. **Note:** For these crops, a minimum 12 month rotation interval must be observed to avoid illegal residues in the harvested crop.
3. Crop injury and/or yield loss may occur up to 4 years after application. A field bioassay is also recommended prior to planting these sensitive crops. See instructions below.

† **Note:** The above intervals are based on average annual precipitation, regardless of irrigation practices. Observance of recommended crop rotation intervals should result in adequate safety to rotational crops. However, Curtail M is dissipated in the soil by microbial activity and the rate of microbial activity is dependent on several interrelating factors including soil moisture, temperature and organic matter. Therefore, accurate prediction of rotational crop safety is not possible. 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.

### Avoiding Injury to Non-Target Plants

This product can affect susceptible broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Therefore, do not apply Curtail M 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.

**Residues in Plants or Manure:** Do not use plant residues, including hay or straw from treated areas, or manure or bedding straw from animals that have grazed or consumed forage from treated areas, for composting or mulching, where susceptible plants may be grown the following season. Do not spread manure from animals that have grazed or consumed forage or hay from treated areas on land used for growing susceptible broadleaf crops. To promote herbicidal decomposition, plant residues should be evenly incorporated or burned. Breakdown of clopyralid in crop residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

### Avoid Movement of Treated Soil

Avoid conditions under which soil from treated areas may be moved or blown to areas containing susceptible plants. Wind-blown dust containing clopyralid may produce visible symptoms, such as epinasty (downward curving or twisting of leaf petioles or stems) when deposited on susceptible plants; however, serious injury is unlikely. To minimize potential movement of clopyralid on wind-blown dust, avoid treatment of powdery dry or light sandy soils until soil is settled by rainfall or irrigation or irrigation shortly after application.

### Avoid Spray Drift

#### Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and grower are responsible for considering all of these factors when making decisions.

Apply only as a medium or courser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Apply only when the wind speed is 2-10 mph at the application site.

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Avoid spray drift since very small quantities of the spray, which may not be visible, may severely injure susceptible crops during active growth or dormant periods. Use coarse sprays to minimize drift. To aid in further reducing drift, a drift control or deposition agent suitable for agricultural use may be used with this product. If used, follow all use recommendations and precautions on the product label.

**Ground Application:** With ground equipment, spray drift can be lessened by keeping the spray boom as low as possible, by applying 10 gallons or more of spray per acre, by keeping the operating spray pressures at the manufacturer's minimum recommended pressures for the specified 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 application under completely calm conditions which may be conducive to air inversion. In hand-gun applications, select the minimum pressure required to obtain adequate plant coverage without forming a mist. **Do not** apply with a mist blower. Do not apply with a nozzle height greater than 4 feet above the crop canopy.

**Aerial Application:** ~~With aircraft, drift can be lessened by using straight stream nozzles directed straight back; by using a spray boom no longer than 3/4 the wing span of the aircraft; by using drift control systems or drift control additives; and, by keeping spray pressures low enough to provide coarse spray droplets. Do not use a thickening agent with the Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays. Spray only when wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to air inversions.~~

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications.

1. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
2. Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Do not make applications into temperature inversions.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory.

**Do not apply by aircraft when an air temperature inversion exists.** Such a condition is characterized by little or no wind and 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, as indicated by horizontal layering of the smoke.

### **Sprayer Clean-Out**

To avoid injury to desirable plants, equipment used to apply Curtail M should be thoroughly cleaned before re-using to apply any other chemicals.

1. Rinse and flush application equipment thoroughly at least 3 times with water after use. Dispose of rinse water by application to treatment area or in non-cropland area away from water supplies.
2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15-20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.

## Mixing Instructions

1. Add 3/4 of the required spray volume to the spray tank and start agitation.
2. Add the required amount of Curtail M.
3. Add any surfactants, adjuvants or drift control agents according to manufacturer's label.
4. Agitate during final filling of the spray tank and maintain sufficient agitation during application to ensure uniformity of the spray mixture.

**Note:** Allow time for thorough mixing of each spray ingredient before adding the next. If allowed to stand after mixing, agitate spray mixture before use.

### Tank Mixing

This product may be applied in tank mix combination with labeled rates of other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

### Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed recommended application rates. Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.
- For products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See instructions for Sprayer Clean-Out.)
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of Curtail M and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

## Application Directions

### Application Timing

Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at or following application may reduce weed control and increase the risk of crop injury at all stages of growth. Only weeds that have emerged at the time of application will be affected. If foliage is wet at the time of application, control may be decreased. Applications of Curtail M are rainfast within 6 hours after application.

### Application Rates

Generally, application rates at the lower end of the recommended rate range will be satisfactory for young, succulent growth of susceptible 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 within the rate range will be needed. Weeds in fallow land or other areas where competition from crops is not present will generally require higher rates for control or suppression.

### Use of Surfactants

Addition of wetting and/or penetration agents is not usually necessary when using Curtail M; however, if a surfactant will be added to the spray solution, use a non-ionic surfactant suitable for use in growing crops of at least 80% active ingredient and **do not exceed** 4 pints per 100 gallons of spray solution (0.5% v/v).

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Use of a surfactant in the spray mixture may increase weed control effectiveness but may reduce crop safety, particularly under conditions of plant stress.

### Spray Coverage

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Do not broadcast apply in less than 2 gallons of total spray volume per acre. For best results and to minimize spray drift, apply in a spray volume of 10 gallons or more per acre. As vegetative canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, follow precautions under Avoiding Injury to Non-target Plantsbel.

### Use with Sprayable Liquid Fertilizer Solutions

Curtail M is compatible with most non-pressurized liquid fertilizer solutions; however, 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 the water source changes, or when tank mixture ingredients or concentrations are changed. A compatibility test is performed by mixing 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 should not exceed 50% of the total spray volume. Premix Curtail M 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.

### Spot Treatments

To prevent misapplication, it is recommended that spot treatments be applied only with a calibrated boom or with hand sprayers according to directions provided below.

**Hand-Held Sprayers:** Hand-held sprayers may be used for spot applications. Care should be taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1000 sq ft. Mix the amount of Curtail M (fl oz or ml) corresponding to the desired broadcast rate in 1 or more gallons of spray. To calculate the amount of Curtail M required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3500 sq ft, multiply the table value by 3.5 (calc. 3500 ÷ 1000 = 3.5). An area of 1000 sq ft is approximately 10.5 x 10.5 yards (strides) in size.

Amount of Curtail M per Gallon of Spray to Equal Specified Broadcast Rate						
1/3 pt/acre	1/2 pt/acre	3/4 pt/acre	1 pt/acre	2 pt/acre	3 pt/acre	4 pt/acre
1/8 fl oz (4 ml)	1/5 fl oz (6 ml)	1/4 fl oz (8 ml)	3/8 fl oz (11 ml)	3/4 fl oz (22 ml)	1 1/8 fl oz (33 ml)	1 1/2 fl oz (44 ml)

†1 fl oz = 29.6 (30) ml

**Note:** For a rate such as 1 3/4 pint per acre, add together the values for 3/4 pint per acre and 1 pint per acre.

### Broadleaf Weeds Controlled

**Note:** The letter in parentheses (-) after the listed weed indicates if life cycle is annual (a), biennial (b), or perennial (p).

- |                              |                               |
|------------------------------|-------------------------------|
| alfalfa (from seed only) (p) | mustard, wild (a)             |
| artichoke, Jerusalem (p)     | nightshade, black (a)         |
| buckwheat, wild (a)          | nightshade, cutleaf (a)       |
| buffalobur (a)†              | nightshade, eastern black (a) |
| burdock, common (b)          | nightshade, hairy (a)         |



chamomile, false (scentless) (a)	pennycress, field (fanweed) (a)
chamomile, mayweed (dogfennel) (a)	pigweed, redroot (a)
clover, black medic (a)	pineappleweed (a)
clover, hop (a)	plantain (p)
clover, sweet (b)	radish, wild (a)
clover, red (p)	ragweed, common (a)
clover, white (p)	ragweed, giant (a)
cocklebur, common (a)	salsify, meadow (goatsbeard) (b)
coffeeweed (a)	shepherdspurse (a)
cornflower (bachelor button) (a)	sicklepod (a)
dandelion (p)	smartweed, Pennsylvania (a)
dock, curly (p)	sorrel, red (p)
flixweed (a) †	sowthistle, annual (a)
groundsel, common (b)	sowthistle, perennial (p) †
hawksbeard, narrowleaf (a)	starthistle, yellow (a)
hawkweed, orange (p)	sunflower, common (a)
hawkweed, yellow (p)	teasel, common (b)
horseweed (a)	thistle, bull (b)
jimsonweed (a)	tansymustard, pinnate (a) †
knapweed, diffuse (b)	thistle, Canada (p)
knapweed, Russian (p) †	thistle, musk (b)
knapweed, spotted (b)	thistle, Russian (1-3-leaf) (a) †
kochia (2-4 leaf) (a) †	velvetleaf (a)
ladysthumb (a)	vetch (a)
lambquarters, common (a)	volunteer beans (a)
lettuce, prickly (a)	volunteer lentils (a)
mustard, tumble (Jim Hill) (a)	volunteer peas (a)
	wormwood, biennial (a)

†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 and duration of weed control will vary with weed size and density, application rate and coverage, and growing conditions before, during and after treatment. For **perennial weeds**, Curtail M will control the initial top growth and inhibit regrowth during the season of application (season-long control). At higher rates shown on this label, Curtail M 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.

## Crop Uses

### Barley, Oats and Wheat

#### Application Timing

Apply Curtail M in the spring to actively growing wheat, barley or oats once 3 leaves have unfolded on the main stem up to the jointing stage (first node of main stem detectable). To control or suppress listed weeds, 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 up to bud stage. A later application when the crop is between the jointing and boot stages of growth 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 lactating 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.

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### Application Rate

Apply 1 3/4 to 2 1/3 pints per acre of Curtail M. 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 M or any application of Curtail M following a spring postemergence treatment with 2,4-D or MCPA may increase the risk of crop injury.

### Tank Mixtures

Curtail M may be applied in tank mix combination with labeled rates of other products registered for postemergence application in wheat, barley, and oats. See Tank Mixing Precautions under Mixing Instructions. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

### Specific Use Precautions:

- Banvel tank mixes with Curtail M may be useful in broadening the annual weed control spectrum but may reduce control of perennials, such as Canada thistle.
- Do not tank mix Curtail M with 2,4-D or dicamba unless the risk of crop injury is acceptable.

### Specific Use Restrictions:

- Do not apply more than 2 1/3 pint (0.122 lb ae clopyralid plus 0.684 lb ae MCPA) per acre or make more than 1 application per crop season.
- **Preharvest Interval:** Do not apply within 72 days of harvest.
- Do not allow livestock to graze treated areas within 45 days of application
- Do not allow dairy animals or meat animals being finished for slaughter to forage or graze treated areas within 7 days after application.

## Flax

### Application Timing

Apply Curtail M when flax is 2 to 6 inches tall and target weeds are actively growing. To control or suppress weeds listed on the label, 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 (plants 4 to 6 inches in height) up to bud stage. Do not apply after flax has begun bolting as crop injury may occur if applied during the bloom period.

### Application Rate

Apply ~~1 1/3 to 1 3/4~~ 0.85 pints per acre of Curtail M per year. ~~The higher rate may be used when the condition of the weeds and/or crop at the time of treatment may prevent optimum control.~~

### Tank Mixtures

Curtail M may be used in combination with other herbicides that are labeled for flax. Refer to the label of the tank mix partner for lists of other weeds controlled, rates of application and use precautions.

### Specific Use Restrictions:

- Do not apply more than ~~1 3/4~~ 0.85 pint (0.045 lb ae clopyralid plus 0.25 lb ae MCPA) per acre or make more than 1 application per crop season.
- **Preharvest Interval:** Do not apply within 72 days of harvest.
- Do not allow livestock, dairy animals or meat animals being finished for slaughter to forage or graze treated areas within 7 days after treatment.

## Grasses Grown for Seed

### Application Timing

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Apply only to established grasses before the boot stage of growth. Applications in the boot stage and beyond will result in increased potential for 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.

#### **Application Rate**

Use 1 3/4 to 3 1/2 pints per acre of Curtail M per year for control of annual weeds and Canada thistle. The potential for crop injury exists due to the MCPA 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 3 1/2 pints per acre of Curtail M per season.

#### **Tank Mixtures for Grasses Grown for Seed**

Curtail M at 1 3/4 pints per acre may be tank mixed with Banvel or Buctril to improve the control of certain weeds. See Tank Mixing Precautions under Mixing Instructions. When tank mixing, do not exceed recommended application rates and use only in accordance with the most restrictive precautions and limitations on the respective product labels.

#### **Specific Use Restrictions:**

- Do not apply more than 3 1/2 pints (0.184 lb ae clopyralid plus 1.03 lb ae MCPA) of Curtail M per acre per year. Do not make more than 2 applications per year with a minimum retreatment interval of 21 days.
- Do not allow livestock to graze treated areas within 7 days of application

### **Rangeland and Pasture Uses**

**Rotation to Broadleaf Crops:** Do not plant broadleaf crops in treated areas until an adequately sensitive bioassay shows that no detectable clopyralid is present in the soil (see field bioassay instructions).

#### **Rangeland and Permanent Grass Pastures**

Apply ~~2 to 4 quarts~~ 4 to 5 pints per acre of Curtail M when weeds are actively growing. For weeds such as biennial thistles, spotted and diffuse knapweed, yellow starthistle and Canada thistle, apply the ~~2 quart~~ 4 pint per acre rate on light to moderate infestations under good growing conditions. Use ~~3 quarts~~ 5 pints per acre for dense infestations or under poor growing conditions such as drought. For control of Russian knapweed, apply ~~3 to 4 quarts~~ 5 pints per acre at the early bud to mid-flowering stage or on fall regrowth. **Note:** For pasture use follow Grazing and Haying Restrictions under General Use Precautions and Restrictions.

#### **Specific Use Restrictions:**

- Do not apply more than 5 pints (1.5 lb ae) of Curtail M per acre per year. Do not make more than 2 applications per year with a minimum retreatment interval of 21 days.
- Do not allow dairy animals or meat animals being finished for slaughter to forage or graze treated areas within 7 days of application.

#### **Conservation Reserve Program (CRP) for Seeding to Permanent Grasses Only**

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

#### **Application Timing**

Curtail M can be applied when perennial grasses are well established as indicated by vigorous growth and development of tillers and secondary roots. 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 up to bud stage. Later applications may result in less consistent control.

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In fields with heavy weed density that 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 during the previous fall and cropland to be planted to CRP in the fall should be treated during the previous spring or summer. A pre-seeding treatment with Curtail M 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 a treating with Curtail M before seeding grasses.

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

#### **Application Rate**

Apply ~~1-3/4 to 4-3/4~~ quarts 3-1/2 to 5 pints per acre of Curtail M. Do not exceed ~~1-3/4~~ quarts 3-1/2 pints per acre for pre-seeding treatment.

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