

**BASF**

PM 25

7969-121

RT 4-23-96  
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ACCEPTED  
with COMMENTS  
In EPA Letter Dated  
MAY 17 1996

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.  
7969-121

# Ultima<sup>TM</sup> 160

herbicide

## Postemergence Grass Herbicide

### Active Ingredient:

Sethoxydim: 2-[1-(ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one\*.....16.2%

Inert Ingredients:.....83.8%

Total.....100.0%

\*Equivalent to 1.3 pounds of sethoxydim per gallon

EPA Reg. No. 7969-121

**KEEP OUT OF REACH OF CHILDREN.**

### WARNING/AVISO

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

### Statement of Practical Treatment

**If in eyes:** Immediately wash eyes with running water for 15 minutes. If irritation develops, consult a physician.

**If on skin:** Wash affected areas with soap and water. If irritation develops, consult a physician.

**If swallowed:** DO NOT INDUCE VOMITING. Dilute with water and get immediate medical attention. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.

**If inhaled:** Move to fresh air. Aid in breathing, if necessary and get immediate medical attention.

See inside for complete **Precautionary Statements, Directions For Use, and Conditions of Sale and Warranty.**

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the **Directions For Use** for information about this standard.

**Net contents: 1 gallon**

BASF Corporation  
P.O. Box 13528, Research Triangle Park, NC, 27709

### Precautionary Statements Hazards to Humans (and Domestic Animals)

Causes substantial but temporary eye injury. Do not get into eyes or on clothing. Harmful if swallowed.

### Personal Protective Equipment:

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

### Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves, such as barrier laminate or viton  $\geq 14$  mils
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing, and loading

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not re-use 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 Statement:

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.

### User Safety Recommendations Users should:

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

### Environmental Hazards

This product is toxic to aquatic organisms. For terrestrial uses, do

not apply directly to water or 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 wash waters.

### Endangered Species Concerns

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

### Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

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 12 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 over short-sleeved shirt and short pants
- Chemical-resistant gloves such as barrier laminate or viton  $\geq 14$  mils
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

### In Case of Emergency

In case of large-scale spillage regarding this product call: CHEMTREC.....800-424-9300 BASF Corporation..800-832-HELP In case of medical emergency regarding this product, call:

1. Your local doctor for immediate treatment
2. Your local poison control center (hospital)
3. BASF Corporation 800-832-HELP

### Storage and Disposal

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

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of federal law. If these wastes cannot be disposed of 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.

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

### Bulk/Mini-bulk Containers and Refillable Containers of Less than 55 Gallon Capacity

Refillable/re-usable containers should be returned to the point of purchase for cleaning and refilling.

### General Information

**Ultima™ 160 herbicide** is a selective broad spectrum postemergence herbicide for control of annual and perennial grass weeds.

**Ultima 160** does not control sedges or broadleaf weeds.

Essentially, all grass crops such as sorghum, corn, small grains, and rice, as well as ornamental grasses such as turf, are susceptible to **Ultima 160**. Avoid all direct or indirect contact with any desired grass crop unless otherwise specified on the **Ultima 160** label.

### Control Symptoms

**Ultima™ 160 herbicide** rapidly enters the plant through the foliage and translocates throughout the plant. Control symptoms exhibited by the grass plant progress from a slowing or stopping of growth (generally within 2 days), to reddening of the foliage and leaf tip burn.

Subsequently, foliage burnback will occur. These symptoms will generally be observed within 3 weeks depending on environmental conditions.

### Application Information

Applications can be made as broadcast, band, or spot spray application at rates and growth stages listed in weed tables.

Do not exceed application rates and use restrictions specified in **Restrictions and Limitations**.

Apply **Ultima 160** to actively growing grasses at the proper growth stage as specified in the rate charts.

All **Ultima 160** applications to control volunteer cereals (barley, corn, oats, rye, wheat) should be made prior to tillering.

Volunteer cereals that emerge from late spring through early summer (May through July) may be partially or incompletely controlled due to unfavorable conditions at time of application in the Western Region.

If fall-germinated volunteer cereals are present at application, a subsequent application may be necessary for control.

### Cultivation Information

Do not cultivate within 5 days before or 7 days after applying **Ultima 160**.

A timely cultivation after 7 days may aid in providing season-long control. For controlling quackgrass, cultivate 14-21 days after an initial or sequential application to aid control.

In irrigated areas, it may be necessary to irrigate before treatment to ensure active weed growth.

### Ground Application

**Spray Volume:** Under most conditions, a spray volume of 10 gallons per acre is optimal, however, 5-20 gallons of spray solution per acre for broadcast application may be used. In the Western Region, a minimum of 10 gallons per acre is recommended.

**Spray Pressure:** When using standard high-pressure hollow cone or flat fan nozzles, adjust pressure to 40-60 psi measured at the nozzle.

**Nozzle Selection:** Thorough spray coverage of grass foliage is essential. For broadcast application use standard high-pressure pesticide nozzles.

Do not use flood or whirl chamber nozzles. Applying **Ultima 160** with control drop applicator (CDA) nozzles is not recommended because erratic coverage can cause inconsistent weed control.

**Boom Height:** Always adjust spray pressure, spray volume, and height of spray boom to ensure penetration of plant canopy and thorough coverage of grasses to be controlled. When tall weeds such as volunteer corn are to be controlled, the boom should be high enough to cover the entire plant. Refer to the nozzle manufacturer's directions for recommended height.

**Band Application:** Banding of **Ultima 160** may be used to control annual grasses. Grasses that are not covered or only partly covered by the spray mix will not be adequately controlled. When treating taller weeds such as volunteer corn, the spray boom must be high enough to thoroughly cover the top leaves and whorls of the plant. All recommendations are based on broadcast application unless otherwise stated. When banding, rates of **Ultima 160**, additives, and water should be reduced in proportion to the area sprayed. Banding is not recommended for perennial grasses.

**Tall Crop Application:** When the crop is tall and the grasses are below the crop canopy, drop nozzles should be used to ensure good coverage of the grass species. Good coverage is essential for maximum control.

### Air Application

**Special Directions:** Do not apply **Ultima 160** by aircraft when wind is blowing more than 10 mph (or more than 5 mph in California). Coarse sprays (large droplets) are less likely to drift. Applicator must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

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**Spray Volume:** Thorough spray coverage of grass foliage is essential. Use a minimum of 5 gallons of water per acre. Increase water volume to 10 gallons per acre if grass foliage or crop canopy is dense.

**Spray Pressure:** Spray pressure should not exceed 40 psi.

**Nozzle Selection:** Use only diaphragm nozzles producing cone or fan spray patterns.

**Boom Height:** Do not exceed a maximum height of 10 feet above the crop.

**Nozzle Orientation:** Nozzles must be oriented to discharge with the air stream (opposite the direction of travel of the aircraft) at approximately a 45° angle downward. Nozzles must not be located farther out than three-fourths the distance from the center of the aircraft to the end of the wing or rotor.

### Spot or Small Area Treatment

Do not make spot treatments in addition to broadcast or band treatments.

When using knapsack sprayers or high-volume spray equipment utilizing hand guns or other suitable nozzle arrangements, prepare a 1.5-1.75% solution of **Ultima 160** in water unless otherwise specified.

**Dash® HC spray adjuvant**, crop oil concentrate, or a recommended methylated seed oil may also be used at a concentration of 0.5% for **Dash HC** and 0.75% for methylated seed oil.

Apply to foliage of grasses on a spray-to-wet basis. Spray coverage should be uniform and complete. Do not spray to point of runoff.

Prepare the desired volume of spray solution by mixing the amount of **Ultima 160** and the amount of **Dash HC** or methylated seed oil in water according to **Table 1**.

Table 1. Spot Treatment Dilution

Desired Spray Solution Volume	Amount of Product to be Added				
	Ultima 160 (1.5%)	Ultima 160 (1.75%)	Dash HC (0.5%)	Crop Oil Concentrate	Methylated Seed Oil (0.75%) <sup>2</sup>
1 gallon	1.9 fl. oz <sup>1</sup>	2.25 fl. oz <sup>1</sup>	0.7 fl. oz <sup>1</sup>	1.0 fl. oz <sup>1</sup>	1.0 fl. oz <sup>1</sup>
25 gallons	1.25 quarts	1.75 quart	1.5 pint	1.5 pint	1.5 pint
50 gallons	2.5 quarts	3.5 quarts	2 pints	3 pints	3 pints
100 gallons	5 quarts	7 quarts	4 pints	6 pints	6 pints

<sup>1</sup> 2 tablespoons = 1 fluid ounce

<sup>2</sup> Not registered for use in California.

### Additives

#### Dash® HC Spray Adjuvant, Crop Oil Concentrate, or Methylated Seed Oil

A nonphytotoxic methylated seed oil or **Dash HC** should always be added to the spray tank as recommended. **Dash HC** may be substituted for a methylated seed oil with some exceptions. **Dash HC** is not recommended for use on dry beans. The methylated seed oil must contain a vegetable oil base and must meet all the following criteria:

- be nonphytotoxic,
- contain only EPA-exempt ingredients,
- provide good mixing quality in the jar test, and
- be successful in local experience.

The exact composition of suitable methylated seed oils will vary, however, they should contain emulsifiers to provide good mixing quality. For additional information, see **Jar Test for Estimating Suitability of Methylated Seed Oils**.

#### Urea Ammonium Nitrate Solution (UAN) or Ammonium Sulfate (AMS)

Adding UAN or AMS is recommended for sugar beets, potatoes, and dry beans to enhance activity on certain grass species. UAN solution is commonly referred to as 28%, 30%, or 32% nitrogen and is a water solution of urea and ammonium nitrate. When AMS is used, 3 quarts of liquid AMS (8-8-0 analysis) may be substituted for 2.5 pounds of solid AMS.

Using a nitrogen additive has improved control of rhizome johnsongrass in some areas. Consult your local BASF representative for recommendations for your area.

Because most nitrogen solutions are mildly corrosive to galvanized, mild steel, and brass spray equipment, rinse the entire spray system with water soon after use.

Use high quality AMS to avoid plugging spray nozzles. The AMS must be readily soluble in water and contain no insoluble materials. Local sources of high quality fine feed grade AMS may be better than fertilizer grade. Low quality AMS may contain material that will not readily dissolve which could result in nozzle tip plugging. To determine quality, perform a jar test adding 1/3 cup of AMS to 1 gallon of water and agitate for 1 minute. If undissolved sediment is observed, predissolve the AMS in water and filter before adding it to the spray tank. If AMS is added directly to the spray tank, add slowly with agitation. Adding too quickly may clog outlet lines. Ensure that AMS is completely dissolved before adding other products.

Table 2. Additive Rate Per Acre

Additive	Ground Application	Air Application
UAN Solution <sup>1</sup>	0.5-1 gallon	0.5 gallon
AMS <sup>1</sup>	2.5 pounds	2.5 pounds
Methylated seed oil <sup>2</sup>	20 ounces	16 ounces
<b>Dash HC</b>	16 ounces	16 ounces
COO	32 ounces	16 ounces

<sup>1</sup> UAN and AMS are not to be used in California and are not recommended in the Pacific Northwest.

<sup>2</sup> Not registered for use in California.

### Mixing

Fill the tank of a thoroughly clean sprayer one-half to two-thirds full with clean water. Start agitation and add UAN or AMS first. Next, add **Dash HC**, crop oil concentrate, or methylated seed oil; and allow to mix thoroughly. Add **Ultima™ 160 herbicide** and the remaining volume of water. Apply **Ultima 160** soon after mixing. Maintain constant agitation during application.

### Jar Test for Estimating Suitability of Methylated Seed Oil

- 1. Water supply:** Use only water from the intended source at the source temperature.
- 2. Amount of water in jar:** For 20 gallons per acre spray volume, use 3 1/3 cups (800 ml) of water. For 10 gallons per acre spray volume, use 1 2/3 cups (400 ml) of water. For 5 gallons per acre spray volume, use 5/8 cup (200 ml) of water. For other spray volumes, adjust proportionately to above.
- 3. Amount of herbicide and methylated seed oil to add:** Add 1 teaspoon (5 ml) of herbicide and methylated seed oil of for each pint of recommended label rate.
- 4. Add components in following sequence,** gently mixing between component additions:
  - 1) Water miscible or soluble products (such as AMS and UAN solution) when applicable.
  - 2) **Dash HC**, crop oil concentrate, or methylated seed oil.
  - 3) **Ultima 160** (and other emulsifiable concentrates when applicable).
- 5. Cap jar,** invert 10 cycles, let stand for 15 minutes, evaluate.
- 6. Evaluation:** An ideal tank mix will be uniform; thus, the suitability of the methylated seed oil is questionable if any of the following are observed:
  - Free oil at the surface-film or globules.
  - Flocculation-fine particles which may be suspended in the liquid or found as a precipitated layer at the bottom of the jar.
  - Clabbering-thickening texture (coagulated) resembling yogurt or a curd-like texture as with cottage cheese.

### Procedure for Cleaning Spray Equipment

Clean the sprayer thoroughly before applying **Ultima 160**, particularly if a herbicide with the potential to injure crops was used.

Consult the label of previously used herbicides for cleaning instructions. If no instructions are available, the steps listed below are suggested for cleaning spray equipment before or following applications of **Ultima™ 160 herbicide**.

1. Thoroughly hose down the inside and outside of the equipment while filling the spray tank half full of water. Flush the system by operating the sprayer until the system is purged of this rinse water.
2. Refill the tank with water while adding 1 gallon of household ammonia or 1 pint of household dishwashing detergent per 100 gallons of water. Or add a commercial sprayer cleaner according to the manufacturer's directions.

Operate the pump to circulate the detergent solution through the sprayer system for 5-10 minutes and discharge a small amount of the solution through the boom and nozzles. Let the solution stand for 24 hours.

3. Flush the detergent solution out of the spray tank through the boom.
4. Remove the nozzles and screens and flush the system with two tankfuls of water.

### Restrictions and Limitations

Do not apply to grasses or crops under stress such as stress due to lack of moisture, herbicide injury, mechanical injury or cold temperatures, as unsatisfactory control will probably result.

Do not apply if rainfall is expected within 1 hour following application as grass control will probably be unsatisfactory.

Physical incompatibility, reduced weed control, or crop injury may result from mixing **Ultima 160** with pesticides (fungicides, herbicides, insecticides, or miticides), additives or fertilizers. BASF does not recommend using **Ultima 160** tank mixes other than those listed on BASF labels, supplemental labeling, or Technical Information Bulletins. Local agricultural authorities may be a source of information when using combinations other than those recommended by BASF. Do not apply **Ultima 160** with other pesticides whose labels caution against their use with oil adjuvants.

Do not apply **Ultima 160** as a pre-plant or preemergent treatment prior to corn, milo, millet, or sorghum.

Do not apply through any type of irrigation system.

Do not make spot treatments in addition to broadcast or band treatments.

**Table 3.**  
**Crop Specific Restrictions and Limitations**

Crop	Minimum Time From Application to Harvest	Maximum Rate Per Acre Per Application	Maximum Rate Per Acre Per Season	Livestock Grazing or Feeding	Aircraft Application	Comments
Beans, dry	30 days	45 ounces	72 ounces	Yes	Yes <sup>4</sup>	
Canola <sup>1</sup> , crambe <sup>1</sup> , rapeseed <sup>1</sup>	60 days	45 ounces	90 ounces	No <sup>2</sup>	Yes	
Flax	75 days	28 ounces	72 ounces	Yes <sup>2</sup>	Yes <sup>4</sup>	When tank mixing, follow <b>Restrictions and Limitations</b> on <b>Buctril</b> or <b>MCPA</b> label; the most restrictive labeling applies. See label for other information.
Sugar beets	60 days	45 ounces	90 ounces	Yes <sup>2</sup>	Yes	
Sunflower	70 days	45 ounces	45 ounces	No <sup>2</sup>	Yes	Commercially released varieties of sunflower are tolerant to <b>Ultima 160</b> at all stages of growth; however, leaf speckling has been occasionally observed on sunflowers with no corresponding reduction in vigor or growth. <b>Ultima 160</b> is not recommended for use on sunflower inbred lines grown for seed because crop safety of these lines has not been adequately established.
Lentils <sup>1</sup>	50 days	45 ounces	72 ounces	No	Yes	
Peas, dry	30 days	45 ounces	72 ounces	Yes	Yes <sup>4</sup>	
Potato, field <sup>3</sup>	30 days	45 ounces	90 ounces	No <sup>2</sup>	Yes	
Onion	30 days	28 ounces	84 ounces	No	Yes	

<sup>1</sup> Not registered for use in California.

<sup>2</sup> Processed pulp and molasses may be fed from sugar beets. Processed meal may be fed from flax, canola, crambe, rapeseed, and sunflowers.

<sup>3</sup> Potato waste may be fed to livestock.

<sup>4</sup> Air application not allowed in California.

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**Other Spray Equipment:** Do not use selective application equipment such as recirculating sprayers, wiper applicators, or **shielded applicators**.

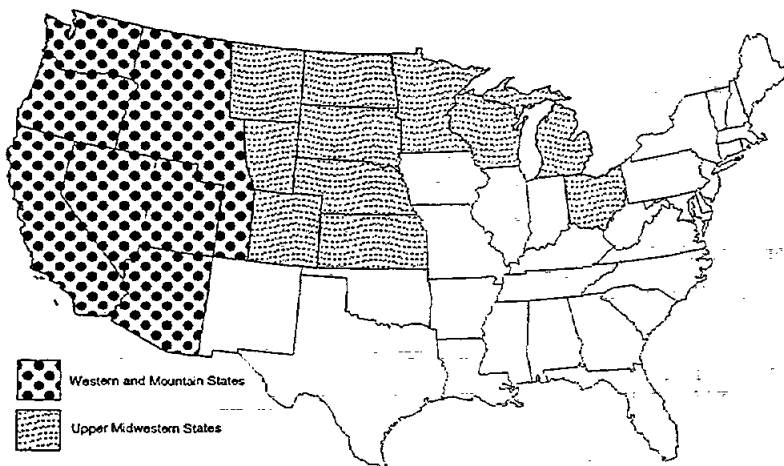
### Herbicide Resistance

Naturally occurring biotypes of certain grass species with resistance to this herbicide and related products (same mode of action) are known to exist. Selection of resistant biotypes, through repeated use of these herbicides, may result in control failures.

If poor performance cannot be attributed to adverse weather conditions or improper application methods, a resistant biotype may be present. In such a case, additional treatments with this herbicide or related products is not recommended. Consult your local representative or agricultural advisor for assistance.

### Regional Use Maps

All rate and time of application recommendations are based on growing region. Refer to the map below. Follow the **Rate and Time of Application** tables for your region only.



### Sugar Beets, Sunflowers, and Soy Beans

Apply to actively growing grasses at the sizes indicated in **Tables 4-7**. Always follow recommendations given in **Application Information** (page 3).

Always adjust spray pressure, spray volume, and height of spray boom to ensure penetration of plant canopy and thorough coverage of grasses to be controlled.

Do not apply to drought-stressed grass or grass that has gone through an extended dry period. In irrigated areas, it may be necessary to irrigate prior to treatment with **Ultima™ 160 herbicide** to ensure that weeds are growing actively.

Refer to **Table 2** for additive rates.

Table 4  
Sugar Beets, Sunflowers, and Dry Beans — Annual Grasses — Upper Midwest (refer to map)

Rate and Maximum Height at Application		
Grass	Maximum Height (inches)	Rate Per Acre (ounces)
Barnyardgrass	8"	20
Crabgrass, Large	6"	20
, Smooth	6"	20
Cupgrass, Woolly	8"	20
Foxtail, Giant	8"	20
, Green	8"	20
, Yellow	8"	20
Goosegrass	6"	20
Itchgrass	4"	40
Johnsongrass (seedling)	8"	20
Junglerice	8"	20
Millet, Wild Proso	10"	10
Oats, Wild, Tame	4"	20
Panicum, Browntop	8"	20
, Fall	8"	20
, Texas	8"	20
Red Rice	4"	40
Ryegrass, Annual	8"	20
Sandbur, Field	3"	25
Shattercane/Wildcane	18"	20
Signalgrass, Broadleaf	8"	20
Sprangletop	8"	20
Volunteer* Barley	3"	20
, Corn	20"	20
, Oats	3"	20
, Rye	3"	20
, Wheat	3"	20
Witchgrass	8"	20

\* See Application Information (page 3) on volunteer cereals.

**Rescue Treatment for Controlling Selected Annual Grasses**

For best results, always apply **Ultima™ 160** herbicide to annual grasses before the growth stage specified in this table. However, if **Ultima 160** cannot be applied at the recommended time, larger annual grasses can be controlled with later applications by increasing the rate of **Ultima 160** to 30 ounces per acre and, except sunflowers, retreat as needed (not to exceed maximum rates as shown in Table 3).

For crabgrass and all volunteer cereals, the addition of 0.5-1.0 gallon of UAN or 2.5 pounds of AMS is recommended.

For foxtails and barnyardgrass less than 4" tall, 15 ounces of **Ultima 160** may be used.

Refer to Table 2 for additive rates.

Table 5  
Sugar Beets, Sunflowers, and Dry Beans - Annual Grasses - Western and Mountain States (refer to map)

Rate and Maximum Height at Application		
Grass	Maximum Height (inches)	Rate Per Acre (ounces)
Barnyardgrass	8"	30
Crabgrass, Large	4"	30
, Smooth	4"	30
Cupgrass, Southwestern	8"	30
Foxtail, Giant	8"	30
, Green	8"	30
, Yellow	8"	30
Goosegrass	4"	30
Johnsongrass (seedling)	8"	30
Junglerice	8"	30
Millet, Wild Proso	10"	20
Oats, Wild	4"	30
Panicum, Fall	8"	30
Ryegrass, Annual	8"	30
Shattercane/Wildcane	18"	30
Volunteer* Barley	4"	40
, Corn	12"	30
, Oats	4"	40
, Rye	4"	40
, Wheat	4"	40
Witchgrass	8"	30

\* See Application Information (page 3) on volunteer cereals.

**Rescue Treatment for Controlling Selected Annual Grasses**

For best results, always apply **Ultima™ 160** herbicide to annual grasses at the growth stage specified in this table. However, if **Ultima 160** cannot be applied at the recommended time, larger annual grasses can be controlled with a later application by increasing the rate of **Ultima 160** to no more than 40 ounces per acre per application (not to exceed maximum rates as shown in Table 3). Apply to actively growing grasses at the rates and sizes indicated above.

Refer to Table 2 for additive rates.

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**Table 6**  
**Sugar Beets, Sunflowers, and Dry Beans — Perennial Grasses — Upper Midwest Region (refer to map)**

Rate and Maximum Height at Application				
Grass	Standard Initial Application		Sequential Application*	
	Maximum Height (inches)	Rate Per Acre (ounces)	Maximum Height (inches)	Rate Per Acre (ounces)
Bermudagrass	6" stolon	30	4" stolon	20
Johnsongrass (Rhizome)	25"	20	12"	20
Johnsongrass (No-Till)	20"	20	12"	20
Muhly, Wirestem	6"	25	6"	25
Quackgrass**	8"	30	8"	20

\* Not applicable to sunflowers.  
 \*\* For quackgrass control, the addition of 0.5-1 gallon of UAN or 2.5 pounds of AMS is recommended.  
 Refer to Table 2 for additive rates.

**Table 7**  
**Sugar Beets, Sunflowers, and Dry Beans - Perennial Grasses - Western and Mountain States (refer to map)**

Rate and Maximum Height at Application				
Grass	Standard Initial Application		Sequential Application*	
	Maximum Height (inches)	Rate Per Acre (ounces)	Maximum Height (inches)	Rate Per Acre (ounces)
Bermudagrass	6" stolon	45	4" stolon	30
Johnsongrass (Rhizome)	10"	45	8"	30
Quackgrass	8"	45	8"	30
Ryegrass, Perennial	8"	30	8"	30

\* Not applicable to sunflowers.  
 Refer to Table 2 for additive rates.

**Tank Mix of Ultima™ 160 + Betamix® Herbicide in Sugar Beets**

Use the tank mix of **Ultima 160 + Betamix herbicide** to control mixed populations of grasses and broadleaf weeds listed as susceptible on the respective labels.

**Restrictions and limitations**

Observe all cautions and limitations on the labels of both products. The most restrictive labeling applies to tank mixes.

Do not apply if rainfall is expected within 1 hour following application as grass control will be unsatisfactory.

Do not apply tank mix if crop shows injury (leaf phytotoxicity or plant stunting) produced by any other prior herbicide treatment as injury may be enhanced or prolonged.

Do not apply tank mix if crop has been subjected to stressful conditions, hail damage, flooding, drought, unseasonable cold, or widely fluctuating temperatures as injury or unsatisfactory control may result.

If stress conditions are present, delay application to give plants a chance to recover.

Do not apply this tank mix within 100 days of harvest if tops are fed. If tops are not fed, do not apply within 75 days of harvest.

Do not exceed a total of 12 pints of **Betamix** or 5 pints of **Ultima 160** per acre per season.

Do not apply **Ultima 160** and **Betamix** as a tank mix unless all environmental restrictions on the **Betamix** label can be followed.

Do not add wetting agents or spray adjuvants when using this tank mix.

Do not add UAN solution or ammonium sulfate to a **Ultima 160** plus **Betamix** tank mix.

Do not apply this tank mix through any type of irrigation system.

Do not use this tank mix if all weeds to be controlled are not at the correct growth stage for treatment at the same time.

Do not use this tank mix if grasses to be controlled include rhizome johnsongrass, quackgrass, bermudagrass, wirestem muhly, volunteer corn, shattercane, red rice, itchgrass, or volunteer cereals.

Do not apply this tank mix when wind speed is over 10 miles per hour. Avoid applications when conditions favor drift.

Follow all restrictions on the **Betamix** labels. The most restrictive labeling applies to all tank mixes.

This tank mix is not applicable in California

**Table 8. Application Rate and Timing Table for Tank Mix of Ultima 160 + Betamix**

Grass	Maximum Height (inches)	Ultima 160 Rate Per Acre	Betamix* Rate Per Acre
Barnyardgrass	2"	30 ounces	Up to 6 pints
Foxtail, Giant	2"	30 ounces	Up to 6 pints
Green	2"	30 ounces	
Yellow	2"	30 ounces	
Millet, Wild Proso	2"	30 ounces	Up to 6 pints

\* Consult the label for local requirements because dosages will vary in different geographic areas.



## Flax

Flax competes poorly with weeds. Therefore, it is important to control grass weeds before the flax stand is reduced and the crop vigor suffers. Where flax stands are poor or when flax is growing slowly, new grass may germinate following an application of **Ultima™ 160** herbicide.

Apply **Ultima 160** to actively growing grasses at the sizes indicated in the following table. For other

**Restrictions and Limitations**, see **Table 3**.

**Table 9. Flax—Annual Grasses**

Grass	Rate and Maximum Height at Application					
	Special Early		Standard		Rescue	
	Max. Ht. (inches)	Rate Per Acre (ounces)	Max. Ht. (inches)	Rate Per Acre (ounces)	Max. Ht. (inches)	Rate Per Acre (ounces)
Barnyardgrass	—	—	4"	20	8"	28
Cupgrass, Woolly	—	—	4"	20	—	—
Foxtail,* Giant	<1.5"	10	4"	20	8"	28
, Green	<1.5"	10	4"	20	8"	28
, Yellow	<1.5"	10	4"	20	8"	28
Oats, Wild	—	—	4"	20	—	—
Panicum, Fall	—	—	4"	20	8"	28
Shattercane/Wildcane	—	—	8"	20	—	—
Volunteer** Barley	3"	20	6"	28	—	—
, Corn	—	—	8"	20	—	—
, Oats	3"	20	6"	28	—	—
, Rye	3"	20	6"	28	—	—
, Wheat	3"	20	6"	28	—	—
Wild Proso Millet	—	—	10"	10	—	—
Witchgrass	—	—	4"	20	—	—

\* When using the **Special Early** rate, the foxtail species should not have started to tiller.  
 \*\* All **Ultima 160** applications to control volunteer cereals should be made prior to tillering.  
 Refer to **Table 2** for additive rates.

### Tank Mix of Ultima 160 with Buctril® and MCPA Herbicides for Grass and Broadleaf Weed Control

Use a tank mix of **Ultima 160** plus MCPA or **Ultima 160** plus **Buctril** for the control of mixed populations of grasses and broadleaf weeds listed as susceptible on the respective product labels. Prepare the tank mix by adding water-soluble forms of herbicides (such as MCPA amine) to half the final water volume, then methylated seed oil or **Dash® HC** spray adjuvant, then **Ultima 160**, then emulsifiable herbicides (such as **Buctril®**) and bring the spray mix to the final volume. Agitation must be continuous from the time of mixing through spraying.

Include **Buctril** or MCPA with **Ultima 160** according to the rates recommended on the respective product labels up to a maximum of 1 pint of **Buctril** equivalent per acre or up to a maximum of 0.25 pound MCPA acid equivalent per acre.

**Do not delay spraying broadleaf weeds even though grassy weeds are not in correct stage for treatment. Buctril or MCPA applied with Ultima 160 may cause leaf burn, retarded growth, and delayed maturity of the crop. Some reduced grass control may be experienced with the above tank mixes.**

Do not add AMS or UAN solution to a tank mix of **Ultima 160** plus

**Buctril or Ultima 160 plus MCPA.**

Follow all restrictions detailed on the MCPA or **Buctril** labels that apply to use in flax. The most restrictive labeling must apply to a tank mix.

**Canola/Crambe/Rapeseed**

**Ultima™ 160 herbicide** is a selective broad spectrum postemergence herbicide for controlling annual and perennial grass weeds in canola/crambe/rapeseed. **Ultima 160** does not control sedges or broadleaf weeds. Essentially, all grass crops such as sorghum, corn, small grains, and rice, as well as ornamental grasses such as turf, are susceptible to **Ultima 160**. Avoid all direct or indirect contact with any desired grass crop unless otherwise specified on the **Ultima 160** label. Canola/crambe/rapeseed at all stages of growth are tolerant to **Ultima 160**.

**Restrictions and Limitations**

Do not apply to canola/crambe/rapeseed under stress, such as stress due to insect damage, lack of moisture, herbicide injury, mechanical injury or cold temperatures, as leaf speckling or yellowing will probably result.

Do not apply **Ultima 160** herbicide within 60 days of harvest.

Do not apply more than a total of 90 ounces of **Ultima 160** per acre in one season.

Allow a minimum of 14 days between sequential applications of **Ultima 160**.

**Ultima 160** is not registered for use with canola, crambe, or rapeseed in California.

**Table 10.**

**Canola, Crambe, and Rapeseed — Annual Grasses  
Upper Midwest (refer to map)**

Grass	Time of Application (Maximum Height)	Ultima 160 Rate per Acre
Wild Proso Millet	10"	10 ounces
Inter-seeded oats (Tame Oats)	6"	15 ounces
Goosegrass	4"	20 ounces
Crabgrass: Large, smooth Wild Oats	4"	
Barnyardgrass Broadleaf Signalgrass Browntop Panicum Fall Panicum Foxtails, Giant, Green, Yellow Johnsongrass, seedling Junglerice Red Sprangletop Ryegrass, Annual Texas Panicum Vitchgrass Woolly Cupgrass	8"	
Inter-seeded Oats (Tame Oats)	10"	
Shattercane/Wildcane If needed, re-treat at the same rate and stage of growth	18"	
Volunteer corn Maintain sufficient boom height above volunteer corn plants for best coverage.	20"	
Field Sandbur	3"	
Volunteer Cereals Barley, Oats, Rye, Wheat Not recommended for spring control of volunteer cereals that emerged the previous fall.	Before tillering 2-4" and prior to overwintering	30 ounces
Itchgrass Red Rice	4"	40 ounces
Crabgrass Foxtails	<4"	15 ounces

Refer to **Table 2** for additive rates.

Table 11. Canola, Crambe, and Rapeseed — Perennial Grasses\*  
Upper Midwest (refer to map)

Grass	Time of Application (Maximum Height)	Ultima™ 160 Herbicide Rate per Acre
Bermudagrass • First Application	Before plant diameter exceeds 3-6" or leaf height above ground exceeds 1".	30 ounces
• Second Application If regrowth occurs or new plants emerge.	Up to 4" length of regrowth or new plants	20 ounces
Johnsongrass, Rhizome • First Application Control may be partial or inconsistent; Johnsongrass growth will be suppressed.	25"	20 ounces
• Second Application If regrowth occurs or new plants emerge.	12"	20 ounces
Quackgrass • First Application Control may be partial or inconsistent; quackgrass growth will be suppressed	8"	30 ounces
• Second Application If regrowth occurs or new plants emerge. Depending upon environmental conditions and crop cul- tural system, season-long control may not always be obtained. However, the competition of quackgrass with the crop will be reduced.	8"	20 ounces
Wirestem Muhly If regrowth occurs, re-treat at the same rate and stage of growth.	6"	25 ounces
* For sequential applications, use the rates as recommended. Do not exceed 90 ounces per acre, per season. Refer to Table 2 for additive rates.		

**Table 12. Canola, Crambe, and Rapeseed — Annual Grasses**  
(Western and Mountain States) (refer to map)

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Grass	Time of Application (Maximum Height)	Ultima™ 160 Herbicide Rate per Acre
Wild Proso Millet	10"	20 ounces
Crabgrass: Large, smooth Goosegrass Wild Oats	4"	30 ounces
Foxtails: Giant, Green, Yellow	8"	
Barnyardgrass (Small) Fall Panicum Johnsongrass, Seedling Junglerice Ryegrass, Annual Southwestern Cupgrass Witchgrass		
Shattercane/Wildcane If needed, re-treat at the same rate and stage of growth		
Volunteer corn Maintain sufficient boom height above volunteer corn plants for best coverage.	12"	40 ounces
Barnyardgrass (Large) (Apply before boot stage.)	16"	
Volunteer Cereals Barley, Oats, Rye, Wheat Volunteer cereals which emerge from late spring through early summer (May through July) may be partially or incompletely controlled due to unfavorable conditions during this time  Refer to <b>Table 2</b> for additive rates.	Before tillering 2-4" and prior to overwintering	

**Table 13. Canola, Crambe, and Rapeseed — Perennial Grasses\***  
(Western and Mountain States) (refer to map)

Grass	Time of Application (Maximum Height)	Ultima™ 160 Herbicide Rate per Acre
Bermudagrass • First Application Bermudagrass growth will be suppressed	Before plant diameter exceeds 3-6" or leaf height above ground exceeds 1".	45 ounces
Second Application When regrowth occurs or new plants emerge.	1-4" length of regrowth or new plants	30 ounces
Johnsongrass, Rhizome • First Application	10"	45 ounces
• Second Application	8"	30 ounces
Quackgrass • First Application	8"	45 ounces
• Second Application When regrowth occurs or new plants emerge. Depending upon environmental conditions and crop cultural system, season-long control may not always be obtained. However, the competition of quackgrass with the crop will be reduced.	8"	30 ounces
Ryegrass, Perennial If regrowth occurs, re-treat at the same rate and stage of growth.	8"	30 ounces

\* For sequential applications, use the rates as recommended. Do not exceed 90 ounces per acre, per season.  
Refer to Table 2 for additive rates.

**Lentils\*, Onions, Peas (dry),  
Field Potatoes**

**Directions For Use**

Apply to actively growing grasses at the sizes indicated.

Always follow the recommendations given in **Application Information**.

Always adjust spray pressure, spray volume, and height of spray boom to ensure penetration of plant canopy and thorough coverage of target grasses.

Do not apply to drought-stressed grass or grass that has gone through an extended dry period. In irrigated areas, it may be necessary to irrigate before treating with

**Ultima™ 160** herbicide to ensure active weed growth.

Allow a minimum of 14 days between sequential applications. Labeled crops at all growth stages are tolerant to **Ultima 160**.

For maximum use rate and minimum time from last application to harvest, consult **Table 3**.

For additional **Restrictions and Limitations**.

\* **Ultima 160** is not registered for use with lentils in California.

**Caution:**

**Ultima 160** plus oil concentrate should be used with caution under the following conditions, due to potential leaf injury.

• When the temperature exceeds 90° F and the relative humidity is 60% or greater,

or

• Anytime the temperature exceeds 100° F, regardless of the humidity.

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Table 14. Lentils, Onions, Dry Peas, Field Potatoes — Annual Grasses  
(For maximum allowable use rate, refer to Table 3)  
Upper Midwest

Rate and Maximum Height at Application						
Grass	Special Early		Standard		Rescue	
	Max. Ht. (inches)	Rate Per Acre	Max. Ht. (inches)	Rate Per Acre	Max. Ht. (inches)	Rate Per Acre
Barnyardgrass	4"	15 ounces	8"	20 ounces	12"	30 ounces
Crabgrass, Large	—	—	10"	20 ounces	8"	30 ounces
, Smooth	—	—	6"	20 ounces	8"	30 ounces
Cupgrass, Woolly	—	—	8"	20 ounces	—	—
Foxtail, Giant	4"	15 ounces	8"	20 ounces	16"	30 ounces
, Green	4"	15 ounces	8"	20 ounces	16"	30 ounces
, Yellow	—	—	8"	20 ounces	16"	30 ounces
Goosegrass	3"	15 ounces	6"	20 ounces	8"	30 ounces
Itchgrass	—	—	4"	40 ounces	—	—
Johnsongrass (seedling)	—	—	8"	20 ounces	16"	30 ounces
Junglerice	—	—	8"	20 ounces	—	—
Oats, Wild	—	—	4"	30 ounces	—	—
Panicum, Browntop	—	—	8"	20 ounces	—	—
, Fall	4"	15 ounces	8"	20 ounces	12"	30 ounces
, Texas	4"	15 ounces	8"	20 ounces	12"	30 ounces
Red Rice	—	—	4"	40 ounces	—	—
Ryegrass, Annual	—	—	8"	20 ounces	—	—
Sandbur, Field (Midwest)	—	—	3"	25 ounces	—	—
Shattercane/Wildcane	—	—	18"	20 ounces	—	—
Signalgrass, Broadleaf	4"	15 ounces	8"	20 ounces	12"	30 ounces
Sprangletop, Red	—	—	8"	20 ounces	—	—
Volunteer <sup>1</sup> Barley	—	—	4"	30 ounces	—	—
, Corn	12"	15 ounces	20"	20 ounces	—	—
, Oats	—	—	4"	30 ounces	—	—
, Rye	—	—	4"	30 ounces	—	—
, Wheat	—	—	4"	30 ounces	—	—
Wild Proso Millet	10"	10 ounces	10"	10 ounces	24"	20 ounces
Witchgrass	—	—	8"	20 ounces	—	—

<sup>1</sup> Plus UAN or AMS in potatoes.  
Refer to Table 2 for additive rates.

Table 15. Lentils, Onions, Dry Peas, Field Potatoes — Annual Grasses  
Western and Mountain States

Rate and Maximum Height and Application		
Grass	Maximum Height (inches)	Rate Per Acre
Barnyardgrass <sup>1</sup>	8"	30 ounces
Crabgrass, Large	4"	30 ounces
, Smooth	4"	30 ounces
Cupgrass, Southwestern	8"	30 ounces
, Woolly	8"	30 ounces
Foxtail, Giant	8"	30 ounces
, Green	8"	30 ounces
, Yellow	8"	30 ounces
Goosegrass	4"	30 ounces
Johnsongrass, (Seedling)	8"	30 ounces
Junglerice	8"	30 ounces
Oats, Wild	4"	30 ounces
Panicum, Fall	8"	30 ounces
, Texas	8"	30 ounces
Ryegrass, Annual	8"	30 ounces
Shattercane/Wildcane	18"	30 ounces
Signalgrass, Broadleaf	8"	30 ounces
Volunteer, Corn	12"	40 ounces
Wild Proso Millet	10"	20 ounces
Witchgrass	8"	30 ounces

<sup>1</sup> For rescue treatment, use up to 40 ounces per acre on barnyardgrass less than 16" high and before boot stage.  
Refer to Table 2 for additive rates.

Table 16. Lentils, Onions, Dry Peas, Field Potatoes — Perennial Grasses  
Western and Mountain States

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Rate and Maximum Height at Application				
Grass	Standard Initial Application		Sequential Application	
	Maximum Height (inches)	Rate Per Acre	Maximum Height (inches)	Rate Per Acre
Bermudagrass, Johnsongrass (Rhizome)	6" stolon 10"	40 ounces 30 ounces	4" stolon 8"	30 ounces 20 ounces
Refer to <b>Table 2</b> for additive rates.				

Table 17. Lentils, Onions, Dry Peas, Field Potatoes — Perennial Grasses  
Upper Midwest

Rate and Maximum Height at Application				
Grass	Standard Initial Application		Sequential Application	
	Maximum Height (inches)	Rate Per Acre	Maximum Height (inches)	Rate Per Acre
Bermudagrass	6" stolon	30 ounces	4" stolon	20 ounces
Johnsongrass (Rhizome) <sup>a</sup>	25"	20 ounces	12"	20 ounces <sup>b</sup>
Muhly, Wirestem	6"	30 ounces	6"	30 ounces
Quackgrass <sup>c</sup>	8"	30 ounces	8"	20 ounces
Ryegrass, Perennial	8"	20 ounces	8"	20 ounces

<sup>a</sup> When using 10-20 gallons of spray per acre, use 30 ounces of **Ultima<sup>®</sup> 160** herbicide in the initial application.

<sup>b</sup> Plus UAN or AMS for johnsongrass and quackgrass (potato only).

<sup>c</sup> Cultivate 14-21 days after the last application to aid control.

Refer to **Table 2** for additive rates.

#### Tank Mix with Lexone<sup>®</sup> or Sencor<sup>®</sup> Herbicides for Annual Grass and Broadleaf Weed Control in Field Potatoes

(This tank mix is not applicable in California.)

Apply a tank mix of **Ultima<sup>™</sup> 160** herbicide plus **Lexone** or **Sencor** to control mixed populations of annual grasses and broadleaf weeds listed as susceptible on the two product labels.

Rates for **Ultima 160** are the same as those listed for annual grasses in the **Vegetable Crops** section of this label. Always add 2 pints of oil concentrate per acre.

Table 18. Lexone/Sencor DF Rates

Crop	Amount of Product per Acre (ounces)	
	Broadcast	Directed
Potato	5.3-10.6	—

Note: Add components in the following sequence:

- 1) **Lexone** or **Sencor**
- 2) Oil concentrate
- 3) **Ultima 160**

#### Restrictions and Limitations for Lexone and Sencor Tank Mixes (partial list)

Observe all precautionary statements and limitations on the labels of both products. The most restrictive language applies in all tank mixes.

Do not apply **Ultima 160** and **Lexone** or **Sencor** as a tank mix unless all environmental restrictions on the **Sencor** label can be followed.

Do not add UAN solution or AMS to a **Ultima 160** plus **Lexone** or **Sencor** tank mix.

Apply only to russetted or white-skinned varieties of potato that are not early maturing.

Do not apply this tank mix in any type of irrigation system.

Do not use this tank mix if all weeds to be controlled are not at the correct growth stage for treatment at the same time.

Do not use this tank mix if grasses to be controlled include rhizome johnsongrass, quackgrass, Bermudagrass, wirestem muhly, volunteer corn or cereal, shatter-cane, red rice, or itchgrass.

Do not apply this tank mix if the crop shows injury (leaf phytotoxicity or plant stunting) produced by any other herbicide treatment as injury may be enhanced or prolonged.

For potatoes, do not apply the tank mix within 60 days of harvest.

Apply only if there has been at least 3 successive days of sunny weather before application or crop injury may occur.