

MAY 3 - 1996

Dr. T.R. Nelsen
BASF Corporation
P.O. Box 13528
Research Triangle Park, NC 27709

Dear Dr. Nelsen:

Subject: Addition of Alfalfa Supplemental Labeling
Ultima 160 Herbicide
EPA Reg. No. 7969-121
Your submission dated April 23, 1996

The amendment referred to above, submitted in connection with registration under FIFRA sec. 3(c)(7)(A), is acceptable since you:

1. Submitted and/or cited all data or other material required for registration/reregistration of your product under FIFRA sec. 3(c)(5) or FIFRA section 4 when the Agency requires all registrants of similar products to submit such data.

2. Submit five (5) copies of your final printed labeling before you release the product for shipment.

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 bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the labeling is enclosed for your records.

Sincerely yours,

CONCURRENCES

SYMBOL							
SURNAME							
DATE							
EPA Form 1320-1 (12-70)				Robert J. Taylor Product Manager 25 Fungicide-Herbicide Branch Registration Division (H7505C)			

enclosure

OFFICIAL FILE COPY

Ultima® 160

herbicide

For use on alfalfa

ACCEPTED
with COMMENTS
In EPA Letter Dated
MAY 3 - 1996

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

7969-121

EPA Reg. No. 7969-121

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** on the EPA-registered label are to be followed. This labeling must be in the possession of the user at the time of herbicide application.

Apply to actively growing grasses at the sizes indicated. Always follow recommendations given in **Application Information** section. 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 before treating with **Ultima® 160 herbicide** to ensure active weed growth. Always add 1 pint of **Dash® HC spray adjuvant**, 2 pints of crop oil concentrate, or 20 ounces of methylated seed oil per acre. (Methylated seed oil is not registered for use in California.)

Table 1. 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
Alfalfa	14 days before cutting for (dry) hay	46 ounces	120 ounces	Yes	Yes	Do not apply Ultima 160 and 2,4-DB as a tank mix unless the 60-day feeding, grazing, and harvesting restrictions on the 2,4-DB label can be observed. (Not applicable in the High and Rolling Plains of Texas, Western Oklahoma, Western Kansas, and Eastern New Mexico.)
Alfalfa	7 days before grazing, feeding, or cutting for (undried) forage	46 ounces	120 ounces	Yes	Yes	

Refer to **Table 2** for additives.

Tank Mix of Ultima 160 with 2,4-DB for Grass and Broadleaf Weed Control in Alfalfa

Apply a tank mix of **Ultima 160** + 2,4-DB to control mixed populations of grasses and broadleaf weeds listed as susceptible on the two product labels.

Some leaf yellowing and burning of the alfalfa may occur with this tank mix. Use of 2,4-DB ester formulations may increase the severity of leaf injury. Additionally, in established alfalfa, 2,4-DB alone may cause twisting of stems and malformation of leaves. (Refer to 2, 4-DB label). Alfalfa plants will generally outgrow these temporary leaf injuries.

Restrictions and Limitations (partial list)

Do not apply **Ultima 160** and 2,4-DB as a tank mix unless all feeding, grazing, and harvesting restrictions on the 2,4-DB label can be observed.

Do not add UAN solution or AMS to a **Ultima 160** plus 2,4-DB tank mix.

Do not use more than 0.75 pound of 2,4-DB active ingredient per acre in this tank mix.

This tank mix is not recommended for the High and Rolling Plains of Texas, Western Oklahoma, Western Kansas, and Eastern New Mexico.

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

Use Recommendations for Ultima 160 in Alfalfa

Ultima 160 may be applied to seedling or established alfalfa and clover grown for hay, silage, green chop, direct grazing or for seed. The effectiveness of **Ultima 160** depends on the absorption and movement throughout the weed. For this to occur, there must be enough leaf surface area to absorb the herbicide, and the grass must be actively growing to move or translocate **Ultima 160** to the roots and buds. Any stress conditions that slow the growth of the grass may decrease control or reduce the speed of control. These stress conditions include mowing, lack of moisture, herbicide injury, mechanical injury, or cold temperatures.

Mowing

The best control of annual grasses can be achieved by applying **Ultima 160** before grass weeds are mowed. Once a grass is mowed it becomes tougher to control, as much of the leaf surface may be removed, putting the grass under stress. In areas without a killing frost, some annuals can over-winter after having been mowed a number of times. These grasses can form large crowns and contain many viable buds. A large crown, even if it is an annual grass, may require repeated applications of **Ultima 160** for partial or complete control.

Irrigated Alfalfa

Irrigation practices can be very critical to the successful use of **Ultima 160** and may be necessary to start grass weeds growing again.

Generally, applications 2-4 days after an irrigation are most effective because:

- grasses resume active growth,
- grasses have less chance to grow too large,
- by waiting later, the alfalfa begins to canopy and interferes with spray coverage.

Irrigation shortly after application (2 days) can be effective, but more consistent grass control is obtained when the irrigation is made before the application.

In large fields, it may take several days for irrigation equipment to be moved across a field. Grasses must not be allowed to grow too large on the part of the field which is to be irrigated first.

In these situations, the field should be irrigated and sprayed in segments to obtain best results.

Annual Grass Control

Apply **Ultima 160** at the grass size and rate indicated in **Tables 3-6**. If a grass has been cut, apply **Ultima 160** after the regrowth reaches the minimum height (so there will be enough leaf area for absorption) and before it exceeds the maximum height indicated.

Apply before the clover or alfalfa canopies cover the grasses and interfere with the spray coverage. Also, applications after a clover or alfalfa cutting may need to be timed to follow an irrigation or rainfall which will allow the grasses to regrow to a treatable size.

Some annual grasses are spring- and summer-germinating plants, while others are fall-germinating plants, and the time they are actively growing and most susceptible to **Ultima 160** may vary from area to area. Also, some annuals germinate

over a long time, and because control of small grasses is desired, applications after each weed flush may be needed. As a general guideline, spray spring- and summer-germinating grasses as early in the season as possible. The optimum application timing may occur very early in the spring after initial green-up. Spray fall-germinating weeds in the fall soon after they begin growing but before any killing frosts because the weeds are more susceptible to **Ultima 160** when they begin growth in the fall, and therefore, control is more complete. Late fall applications may be less effective due to environmental changes, such as frosts or the onset of flowering.

Interseeded Oats

Oats interseeded with alfalfa may be killed by applying **Ultima 160**. Their removal allows the seedling crops to grow with less competition. This application should be made before the oats get too large. Application made in the boot stage or later will not be as effective as when applied onto young oats.

Perennial Grass Control

Ultima 160 effectively controls or suppresses perennial grasses such as Bermudagrass, johnsongrass, quackgrass, wirestem muhly, and perennial ryegrass. However, their growth characteristics are such that they are more difficult to control than annual grasses, especially in a perennial crop such as established alfalfa or clover. A program of repeated applications is usually necessary for best results.

The most economical way of controlling perennial grasses is to do so in the year of stand establishment before rhizomes or stolons become large and difficult to kill. The field should be disked before seeding to thoroughly fragment rhizomes or stolons.

In summer and fall seedings, cool season grasses (quackgrass, wirestem muhly, and perennial ryegrass) can become very competitive under cool fall conditions. Fall applications of **Ultima 160** will reduce late season grass growth and limit the ability of grasses to accumulate nutrient reserves in roots and rhizomes.

In established stands, it is important to begin applying in the spring when conditions favor active growth and before storage tissues have increased their nutrient reserves. Additional applications should be made on any grass regrowth in later cuttings.

Table 2. Additive Rate per Acre

Additive	Ground Application	Air Application
UAN Solution ¹	4-8 pints	4-8 pints
Ammonium Sulfate ¹	2.5 pounds	2.5 pounds
Methylated Seed Oil ²	20 ounces	16 ounces
Crop Oil Concentrate	32 ounces	16 ounces
Dash HC	16 ounces	16 ounces

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

² Methylated seed oil is not registered for use in California.

**Table 3. Annual Grasses
Midwest**

Application Rate and Timing				
Grass	Special Early		Standard	
	Maximum Height (inches)	Rate Per Acre (ounces)	Maximum Height (inches)	Rate Per Acre (ounces)
Barnyardgrass	4"	15 ounces ^a	8"	18 ounces
Crabgrass, Large	—	—	4"	18 ounces
, Smooth	—	—	4"	18 ounces
Cupgrass, Woolly	—	—	8"	18 ounces
Foxtail, Giant	4"	15 ounces	8"	18 ounces
, Green	4"	15 ounces	8"	18 ounces
, Yellow	—	—	8"	18 ounces
Goosegrass	3"	15 ounces	4"	18 ounces
Itchgrass	—	—	4"	37 ounces
Johnsongrass (seedling)	—	—	8"	18 ounces
Junglerice	—	—	8"	18 ounces
Oats, Wild	—	—	4"	18 ounces
, Tame	—	—	8"	15 ounces
Panicum, Browntop	—	—	8"	18 ounces
, Fall	4"	15 ounces	8"	18 ounces
, Texas	4"	15 ounces	8"	18 ounces
Red Rice	—	—	4"	37 ounces
Ryegrass, Annual	—	—	8"	18 ounces
Sandbur, Field	—	—	3"	28 ounces
Shattercane/Wildcane	—	—	18"	18 ounces
Signalgrass, Broadleaf	4"	15 ounces	8"	18 ounces
Volunteer ^b Barley	—	—	4"	28 ounces
, Corn	12"	15 ounces	20"	18 ounces
, Oats	—	—	4"	28 ounces
, Rye	—	—	4"	28 ounces
, Wheat	—	—	4"	28 ounces
Wild Proso Millet	10"	15 ounces	10"	18 ounces
Witchgrass	—	—	8"	18 ounces

^a In the following states, use 18 ounces: AL, AR, FL, GA, LA, MS, NC, SC, TN, TX, and VA.

^b See **Application Information** on volunteer cereals.

Add 4-8 pints of UAN or 2.5 pounds of AMS to control crabgrass, wild oats, and all volunteer cereals.

Refer to **Table 2** for additives.

**Table 4. Perennial Grasses
Midwest**

Application Rate and Timing				
Grass	Initial Application		Sequential Application	
	Maximum Height (inches)	Rate Per Acre (ounces)	Maximum Height (inches)	Rate Per Acre (ounces)
Bermudagrass	6" stolon	46 ounces	4" stolon	46 ounces
Johnsongrass (Rhizome)	25"	46 ounces	12"	46 ounces
Quackgrass ¹	8"	46 ounces	8"	46 ounces
Ryegrass, Perennial	8"	37 ounces	8"	37 ounces
Wirestem, Muhly	6"	28 ounces	6"	28 ounces

¹ Add 4-8 pints of UAN or 2.5 pounds of AMS to control quackgrass.

Refer to **Table 2** for additives.

**Table 5. Annual Grasses
Western and Mountain States**

Application Rate and Timing				
Grass	Standard		Rescue ¹	
	Maximum Height (inches)	Rate Per Acre (ounces)	Maximum Height (inches)	Rate Per Acre (ounces)
Barnyardgrass	8"	28 ounces	16"	37 ounces
Crabgrass, Large ²	4"	28 ounces	—	—
, Smooth	4"	28 ounces	—	—
Cupgrass, Southwestern	8"	28 ounces	—	—
Foxtail ³ , Giant	8"	28 ounces	—	—
, Green	8"	28 ounces	—	—
, Yellow	8"	28 ounces	—	—
Goosegrass	4"	28 ounces	—	—
Johnsongrass (seedling)	8"	28 ounces	—	—
Junglerice	8"	28 ounces	—	—
Oats, Wild	4"	28 ounces	—	—
Panicum, Fall	8"	28 ounces	—	—
Ryegrass, Annual	8"	28 ounces	—	—
Shattercane/Wildcane	18"	28 ounces	—	—
Volunteer ⁴ Barley	4"	37 ounces	—	—
, Corn	20"	28 ounces	—	—
, Oats	4"	37 ounces	—	—
, Rye	4"	37 ounces	—	—
, Wheat	4"	37 ounces	—	—
Wild Proso Millet	10"	18 ounces	—	—
Mitchgrass	8"	28 ounces	—	—

¹ Rescue Treatment for Controlling Selected Annual Grasses

For best results, always apply **Ultima[®] 160** herbicide to annual grasses at the growth stage as specified above (**Annual Grasses — Standard Recommendations**). 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**.

² Apply before boot stage.

³ After the second cutting, a sequential application of 37 ounces of **Ultima 160** per acre is recommended. Be sure that weed size does not exceed 8 inches.

⁴ See **Application Information** on volunteer cereals.

Refer to **Table 2** for additives.

**Table 6. Perennial Grasses
Western and Mountain States**

Application Rate and Timing				
Grass	Standard Initial Application		Sequential Application	
	Maximum Height (inches)	Rate Per Acre (ounces)	Maximum Height (inches)	Rate Per Acre (ounces)
Bermudagrass	6" stolon	46 ounces	4" stolon	46 ounces
Johnsongrass (Rhizome)	10"	46 ounces	8"	46 ounces
Quackgrass	8"	46 ounces	8"	46 ounces
Ryegrass, Perennial	8"	37 ounces	8"	37 ounces

Refer to **Table 2** for additives.

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Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, this use represents a State of Tennessee Section 18 emergency exemption and it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as: weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF"), or the Seller. All such risks shall be assumed by the Buyer. BASF warrants that this product conforms to the chemical description on the label. **Directions For Use** are subject to the inherent risks referred to above. BASF MAKES NO OTHER EXPRESSED OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL BASF OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of sale and warranty, which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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