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Yellow Copy

MAY 15 1989

Mr. John J. Arthur  
American Cyanamid Company  
Agricultural Research Division  
P.O. Box 400  
Princeton, NJ 08540

Dear Mr. Arthur:

Subject: Label Amendment/Supplemental Label - Addition of Edible Beans, Soybeans & Safflower as Rotational Crops  
Assert Herbicide  
EPA Registration No. 241-285  
Your Submission Dated May 8, 1989

We have completed our review of the referenced submission. The supplemental label is acceptable. A stamped copy is enclosed for your records. Please submit five (5) copies of final printed supplemental labeling. The full label is acceptable provided that the following change is made:

Under the section entitled "Application with Liquid Fertilizers", delete all reference to "3 + 3 Brominal" since this product was voluntarily cancelled.

Please submit five (5) copies of the final printed label incorporating the above change. A stamped copy of the full label is enclosed for your records.

Sincerely yours,

*J. J. M (for)*

Robert J. Taylor  
Product Manager (25)  
Fungicide-Herbicide Branch  
Registration Division (H7504C)

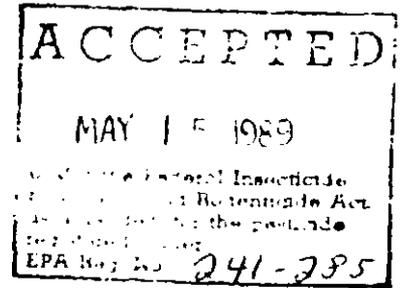
Enclosures

RTaylor:JMiller:Rm 251:5-15-89:557-0706

CONCURRENCES

SYMBOL	H7505C							
SURNAME	J. Miller							
DATE	5-15-89							

SUPPLEMENTAL LABEL



ASSERT® Herbicide

EPA Reg. No. 241-285

FOR USE IN WHEAT, BARLEY AND SUNFLOWER

ADDITIONAL FOLLOW CROPS

OBSERVE ALL PRECAUTIONARY STATEMENTS IN THE ASSERT LEAFLET LABEL BEFORE USING

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 through any type of irrigation system.

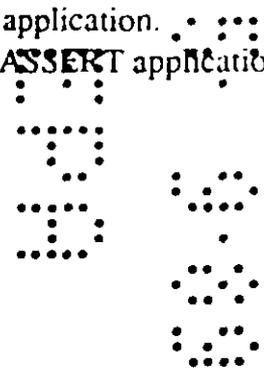
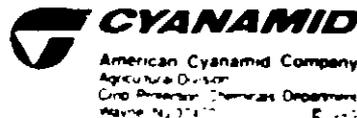
FOLLOW CROPS

The following rotational crops may be planted after applying ASSERT at recommended rates in wheat, barley and sunflowers:

Barley Corn Potatoes Sunflowers Wheat Soybean Edible Bean Safflower

If ASSERT and GLEAN, ASSERT and ALLY, or ASSERT and HARMONY are applied during the same year, follow the most restrictive precautions, directions and recropping/rotation limitations that appear on the respective product labels.

DO NOT plant sugar beets for at least 20 months following an ASSERT application. DO NOT plant other rotational crops for at least 15 months following an ASSERT application. Land should be deep plowed prior to planting other crops.



This label must be in the possession of the user at the time of pesticide application. Manufactured by E. I. duPont de Nemours and Co., Inc. \* Registered trademark of American Cyanamid Company

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ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

MAY 15 1989

ASSERT®  
herbicide

For Use In Wheat, Barley and Sunflowers

Insecticide,  
Fungicide, and  
Herbicide Act  
the pesticide  
registered under EPA Reg. No.  
241-285

ACTIVE INGREDIENT:

m-Toluic acid, 6-(4-isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl)-,  
methyl ester and p-Toluic acid, 2-(4-isopropyl-4-methyl-5-oxo-2-  
imidazolin-2-yl)methylester.....27.0%

INERT INGREDIENTS.....73.0%

TOTAL.....100.0%

(One gallon contains 2.5 lbs of active ingredient)

EPA Reg. No. 241-285

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

DANGER!/PELIGRO!

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que  
la etiqueta le haya sido explicada ampliamente.

STATEMENT OF PRACTICAL TREATMENT

If in eyes: hold eyelids open and flush with a steady gentle stream of water for  
15 minutes. Get medical attention.

If swallowed: drink promptly a large quantity of milk, egg white, gelatin  
solution, or if these are not available, large quantities of water. Avoid  
alcohol. Get medical attention.

If on skin: wash thoroughly with soap and water. Get medical attention if  
irritation persists.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric  
lavage.

See Next Page For Additional Precautionary Statements

AMERICAN CYANAMID COMPANY  
AGRICULTURAL DIVISION  
CROP PROTECTION CHEMICALS DEPARTMENT  
WAYNE, NJ 07470 ©1989

Net Contents:

5/8/89

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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER

Corrosive, Causes Irreversible Eye Damage

DANGER! Do not get in eyes. Wear goggles and gloves when handling. Avoid contact with skin and clothing. Avoid breathing vapor or spray mist. Use with adequate ventilation. Wash thoroughly after handling with soap and water. Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

DO NOT apply directly to any body of water or wetlands.  
DO NOT contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

ASSERT should be used only in accordance with recommendations on this label. Do Not apply this product through any type of irrigation system.

Observe all cautions and limitations on this label and on the labels of products used in combination with ASSERT. American Cyanamid Company will not be responsible for losses or damages resulting from the use of this product in any manner not specifically recommended by American Cyanamid. User assumes all risks associated with such non-recommended use. Keep container closed to avoid spills and contamination.

STORAGE AND DISPOSAL

Ice will form in the container at 5°F (-15°C). If ice occurs from prolonged storage at temperatures of 5°F (-15°C) or below, place container at room temperature until ice melts.

DO NOT contaminate water, food or feed by storage or disposal. DO NOT mix or store in unlined containers.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: 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.

## EQUIPMENT APPLICATION INSTRUCTIONS

The spray equipment must be clean and properly calibrated before treatments are applied. For best results, use flat fan nozzles, and a minimum pressure of 20 to 40 psi to achieve uniform spray distribution and minimize drift. DO NOT use flood jet nozzles. Keep the by-pass line on or near the bottom of the tank to minimize foaming. An antifoaming agent may be added to the tank if needed.

In ground applications, check nozzles for even distribution of spray droplets.

In aerial applications, it is recommended that a flagman be located at each end of the field, or an automatic mechanical flagging unit be attached to the aircraft to ensure uniform aerial application.

## MIXING INSTRUCTIONS

Fill tank one-half to three quarters full with clean water.

When using ASSERT alone, add ASSERT to the partially filled tank while agitating. When ASSERT is thoroughly mixed, fill remainder of tank with water while agitating.

When using ASSERT with a broadleaf herbicide, add the broadleaf herbicide first to the partially filled tank while agitating. When the broadleaf herbicide is thoroughly mixed, add ASSERT to the tank, then complete filling the tank with water while agitating. Maintain continuous agitation until spraying is completed.

For spray volumes in excess of 10 gallons of spray per acre (gpa), the addition of a non-ionic surfactant of at least 80% active ingredient or crop oil is required. For each gallon in excess of 10 gpa, add 0.3 fluid ounces of a non-ionic surfactant or crop oil. Use only recommended surfactants cleared for application to growing crops. An antifoaming agent may be added to the tank if needed.

## APPLICATIONS WITH LIQUID FERTILIZERS

### GENERAL

ASSERT can be applied with a non-phosphorus liquid fertilizer such as 28-0-0. Surfactant or crop oil (adjuvant) is not necessary when applying ASSERT to liquid fertilizer at 10GPA or less.

ASSERT can be applied to wheat and barley in liquid fertilizers, alone or in combination with MCPA ester<sup>1</sup>, 2,4-D ester<sup>2</sup>, or Bromoxynil + MCPA<sup>3</sup> (Bromate or 3 + 3 Brominal<sup>8</sup>). Follow all ASSERT label recommendations regarding timing of application, special instructions and precautions. Apply treatments in 5 to 15 gallons of liquid fertilizer (with or without water) per acre.

NOTE: Herbicides can increase contact burn of fertilizers on plant foliage. Reduced gallons of fertilizer per acre may decrease leaf burn. DO NOT allow ASSERT to remain overnight in a liquid fertilizer solution.

All individual state regulations relating to fluid fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company selling the ASSERT/liquid fertilizer mixture.

### LIQUID FERTILIZER COMPATIBILITY DETERMINATIONS

If a liquid fertilizer and herbicide(s) mixture separates in the spray tank, clogged equipment and uneven application can result, which can cause poor weed control and crop injury. Always predetermine the compatibility of ASSERT alone or with other herbicides in the specific liquid fertilizer to be used according to the following directions:

1. Add 1 pint fertilizer to each of 2 one-quart jars.
2. Add 1/2 teaspoon of adjuvant\* to one jar.
3. (a) When using ASSERT alone, add to each jar the correct amount of ASSERT as specified in the table below. (b) When using ASSERT tank mixtures, first add the specified quantity of MCPA ester, 2,4-D ester, Bronate or 3 + 3 Brominal and then add the correct amount of ASSERT.
4. Close both jars and shake thoroughly for 10 seconds. Let them stand for 30 minutes and then observe the results. Look for signs of separation, an oily layer or globules, sludge, flakes or other precipitates.
5. Determine compatibility.
  - (a) If the mixture without adjuvant does not separate, use this mixture in your spray tank.
  - (b) If the mixture with adjuvant does not separate, but the one without adjuvant separates, use the adjuvant mixture in your spray tank. Add the adjuvant to the liquid fertilizer as directed on the manufacturer's label.
  - (c) If either mixture separates, but mixes readily with shaking, the mixture can be used providing good agitation is maintained in the spray tank.
  - (d) If separation of the mixture occurs, and agitation and/or adjuvant does not correct this problem, DO NOT use the herbicide(s) in that specific liquid fertilizer.

Teaspoons of Specific Herbicide to be Added to 1 pint of Liquid Fertilizer Solution

Gallons of Liquid Fertilizer plus Water to be Applied per acre	ASSERT	MCPA ester	2,4-D ester	Bronate or 3 + 3 Brominal
5	3	2	2	2
10	1 1/2	1	1	1
15	3/4	1/2	1/2	1/2

SPRAYING INSTRUCTIONS

Uniformly apply the recommended ASSERT or ASSERT tank-mixture in 8 or more gallons of water per acre with ground equipment or in 5 or more gallons of water per acre by aircraft. Avoid overlapping, and shut off spray booms while starting, turning, slowing or stopping, or injury to the crop or rotational crops may result. DO NOT allow spray to drift onto adjacent crops as injury may occur.

IMPORTANT

DO NOT make more than one application of ASSERT per growing season. DO NOT graze treated fields or cut treated forage for silage or hay. Wheat or barley straw may be fed or used for bedding.

FOLLOW CROP RESTRICTIONS

The following rotational crops may be planted after applying ASSERT at recommended rates in wheat, barley and sunflowers:

Barley	Corn	Potatoes	Sunflowers
Wheat	Safflower	Edible Beans	Soybeans

DO NOT plant sugar beets for at least 20 months following an ASSERT application. DO NOT plant other rotational crops for at least 15 months following an ASSERT application. Land should be deep plowed prior to planting other crops.

If ASSERT and GLEAN, ASSERT and ALLY, or ASSERT and HARMONY are applied during the same year, follow the most restrictive precautions, directions and recropping/rotation limitations that appear on the respective product labels.

WHEAT AND BARLEY

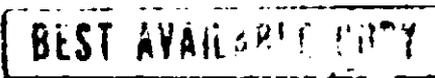
GENERAL INFORMATION

ASSERT is a selective herbicide for the postemergence control of wild oats and certain broadleaved weeds in wheat and barley. Apply ASSERT postemergence to wheat (including durum) and barley from the 2-leaf stage, but before development of the first internode.

ASSERT alone or in combination can be applied by ground equipment or aircraft.

Maximum weed control with ASSERT alone or in combination is obtained when temperature, moisture, fertility and cultural practices provide favorable conditions for active plant growth. Thorough uniform spray coverage is required to maximize weed control.

ASSERT rapidly inhibits growth of susceptible weeds; however, typical symptoms (discoloration) of dying weeds may not be noticeable for 2-4 weeks after application. Weeds hardened by cold weather or drought stress may not be fully controlled and regrowth may occur.



## WEEDS CONTROLLED:

- Wild Oats (Avena fatua)
- Wild Mustard (Brassica kaber)
- Tansy Mustard (Descurainia pinnata)
- London Rocket (Sisymbrium irio)
- Flixweed (Descurainia sophia)
- Field Pennycress, Fanweed (Thlaspi arvense)
- \* Catchweed bedstraw (Galium aparine)
- \* Tartary buckwheat (Fagopyrum tataricum), up to 3 leaf stage
- \* Wild buckwheat (Polygonum convolvulus), up to 3 leaf stage

\* ASSERT causes plant to stop growing, resulting in a non-competitive plant.

## HERBICIDE COMBINATIONS:

Additional weeds can be controlled in wheat and barley when ASSERT is tank-mixed with MCPA ester, 2,4-D ester, bromoxynil + MCPA, GLEAN<sup>4</sup>, ALLY<sup>5</sup>, or HARMONY<sup>6</sup> at manufacturer's recommended label rates and application timing.

NOTE: Follow the most restrictive precautions, directions and recropping/rotation limitations that appear on the respective product labels. Tank-mixtures must be applied prior to the development of the first internode of the crop.

DO NOT tank-mix ASSERT with 2,4-D ester unless the crop is fully tillered.  
DO NOT tank-mix ASSERT with BANVEL<sup>7</sup> or amine formulations of MCPA or 2,4-D.

## RATES AND TIMING OF APPLICATION

For wild oats populations in excess of 25 plants per square foot, use a minimum spray volume of 15 gallons per acre.

### EAST OF THE ROCKY MOUNTAINS

Use ASSERT at 1.2-1.5 pints per acre (19-24 fl.oz./A) alone or in tank-mixtures with MCPA ester, 2,4-D ester, bromoxynil + MCPA, GLEAN, ALLY, or HARMONY at manufacturer's recommended label rates when wild oat plants are in the 1-4 leaf stage of growth. Use the high rate and increase spray volume if the wild oats have initiated tillering.

### WEST OF THE ROCKY MOUNTAINS

Use ASSERT at 1.5 pints per acre (24 fl.oz./A) alone or in tank-mixtures with MCPA ester, 2,4-D ester, bromoxynil + MCPA, GLEAN, ALLY, or HARMONY at manufacturer's recommended label rates when wild oat plants are in the 1-4 leaf stage of growth.

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## SUNFLOWERS

### GENERAL INFORMATION

ASSERT herbicide is a selective herbicide for the postemergence control of wild mustard and wild oats in sunflowers. Apply ASSERT postemergence to sunflowers not under drought stress, from the 2 to 8-leaf stage of growth (sunflowers must be less than 15 inches high). Maximum weed control with ASSERT is obtained when temperature, moisture, fertility and cultural practices provide favorable conditions for active plant growth. Thorough uniform spray coverage is required to maximize weed control.

### WEEDS CONTROLLED:

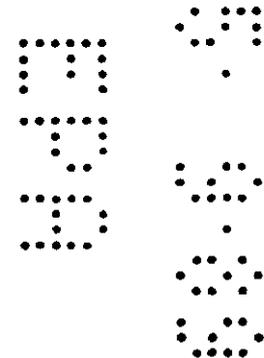
- Wild Mustard (Brassica kaber)
- Wild Oats (Avena fatua)

### TIMING AND RATES OF APPLICATION

For optimum wild mustard control apply ASSERT at 0.6 to 0.8 pints per acre (9.6-12.8 fl. oz./A) when the majority of wild mustard plants are in the rosette stage and prior to bloom.

For wild oat control apply ASSERT at 1.2 pints per acre (19 fl. oz./A) when the majority of wild oat plants are in the 1-4 leaf stage of growth.

ASSERT may be applied following application of a soil applied herbicide registered for use in sunflowers such as AMIBEN<sup>8</sup>, EPTAM<sup>9</sup>, PROWL<sup>®</sup>, TREFLAN<sup>10</sup>.



DISCLAIMER

The label instructions for the 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, it is impossible to eliminate all risks inherently associated with 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 the use or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above.

Any damages arising from breach of this warranty shall be limited to direct damages and shall not include consequential commercial damages such as loss of profits or values or any other special or indirect damages.

American Cyanamid Company makes no other express or implied warranty, including other express or implied warranty of FITNESS or of MERCHANTABILITY.

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<sup>1</sup> MCPA ester is sold under various brand names.

<sup>2</sup> 2,4-D ester is sold under various brand names.

<sup>3</sup> Bromoxynil + MCPA is sold under various brand names.

<sup>4</sup> GLEAN is a trademark of E.I. Du Pont de Nemours and Co., Inc.

<sup>5</sup> ALLY is a trademark of E.I. Du Pont de Nemours and Co., Inc.

<sup>6</sup> HARMONY is a trademark of E.I. Du Pont de Nemours and Co., Inc.

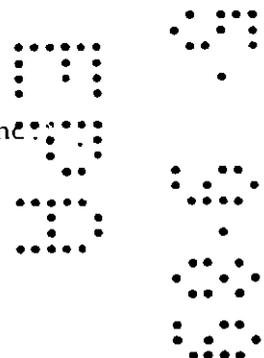
<sup>7</sup> BANVEL is a trademark of Sandoz Crop Protection Corp.

<sup>8</sup> AMIBEN, BRONATE and BROMINAL are trademarks of Rhone Poulenc.

<sup>9</sup> EPTAM is a trademark of ICI Americas, Inc.

<sup>10</sup> TREFLAN is a trademark of Elanco Products Company.

<sup>®</sup>Registered Trademark of American Cyanamid Company



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In case of an emergency endangering life or property involving this product, call collect, day or night (201) 835-3100.

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