



ASSERT ®
Herbicide

For Use In Wheat, Barley and Sunflowers

ACTIVE INGREDIENTS:

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 2.9 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 hasca 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

Net Contents:

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AMERICAN CYANAMID COMPANY
AGRICULTURAL DIVISION
CROP PROTECTION CHEMICALS DEPARTMENT
WAYNE, NJ 07470 • 1990

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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

Keep from freezing. Do not store below 32°F. 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. Stability of ASSERT is not affected by freezing and thawing.

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.

GENERAL INFORMATION

Use of ASSERT herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

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 pressure of 20 to 40 psi to achieve uniform spray distribution and minimize drift. A drift retardant agent may be added to the tank if needed. DO NOT use flood jet nozzles. Keep the by-pass line on or near the bottom of the tank to minimize foaming.

During aerial applications, a flagman should be located at each end of the field, or attach an automatic mechanical flagging unit to the aircraft to ensure uniform application. Do not overlap spray.

MIXING INSTRUCTIONS

ADD clean water to the spray tank one-half to three quarters full.

When using ASSERT alone, add ASSERT to the partially filled tank while agitating. When ASSERT is thoroughly mixed, fill the remainder of tank with clean water while continuing agitation. For spray volumes in excess of 8 gallons per acre (GPA), the addition of a non-ionic surfactant of at least 80% active ingredient is required. When 8 gallons of spray solution per acre is exceeded, add .3 ounces of a non-ionic surfactant for every gallon of spray solution above 8 gallons per acre.

Crop oil can be added to an ASSERT application at a rate of 1 quart per acre of spray solution. The addition of crop oil eliminates the need of a non-ionic surfactant. However, the addition of a non-ionic surfactant plus crop oil is acceptable in tank mix with an ASSERT application.

When tank mixing ASSERT with a labeled tank mix partner, add the partner herbicide(s) first while agitating the solution. When the herbicide solution is thoroughly mixed, add ASSERT to the tank. An antifoaming agent may be added if necessary. After the ASSERT and tank mix partners are thoroughly mixed, the addition of a non-ionic surfactant, crop oil, or drift retardant should be added last. Complete filling the tank with water while continuing agitation. Maintain continuous agitation until spraying is completed.

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 + liquid fertilizer at 8 gallons per acre of spray solution or less.

Non-phosphorus liquid fertilizers can be applied with ASSERT alone or in combination with MCPA ester^{1/}, 2,4-D ester^{1/}, or Bromoxynil + MCPA ester^{1/} (Bronate^{2/}) to wheat and barley. Follow all ASSERT label recommendations regarding timing of application, special instructions and precautions. Apply the ASSERT/non-phosphorus liquid fertilizer combination with a minimum of 5 gallons of spray solution per acre with aircraft or a minimum of 8 gallons per acre with ground equipment.

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 of liquid 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, or Bromoxynil + MCPA ester 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
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 a rotational crop could result. DO NOT allow spray to drift onto adjacent crops as injury may occur. For optimum weed control, ASSERT must absorb into plant leaves for 3 hours prior to overhead irrigation or rainfall.

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 and barley straw may be fed or used for bedding.

FOLLOW CROP RESTRICTIONS

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

Soybean	Corn	Edible beans	Potatoes ^a
Safflower	Wheat	Barley	Sunflowers

^a If 12 inches of rainfall and/or irrigation have not occurred from the day of ASSERT application through October of the same year of application, do not plant potatoes for 15 months after an ASSERT application.

If ASSERT and GLEAN^{3/}, ASSERT and ALLY^{3/}, or ASSERT and FINESSE^{3/} are applied together in any type of tank mix 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 than those listed above for 15 months following an ASSERT application. Land should be deep plowed prior to planting other crops.

Use of ASSERT herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

WHEAT AND BARLEY

GENERAL INFORMATION

ASSERT is a selective herbicide for the postemergence control of wild oats, roughstalk bluegrass, and certain broadleaved weeds in wheat and barley. Apply ASSERT postemergence to wheat (including durum) and barley from the 2 leaf stage of the crop, but before development of the first internode (jointing). Do not apply ASSERT when freezing temperatures are forecast.

Wild oats will be controlled with ASSERT applied when wild oats are in the 1 to 4 leaf stage.

If unfavorable growing conditions exist, ASSERT may cause slight discoloration and delayed growth of durum wheat. The crop will recover under normal growing conditions and yields will not be affected.

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

ASSERT rapidly inhibits growth of susceptible weeds; however, typical symptoms (discoloration) of dying weeds may not be noticeable until 2-4 weeks after application. Weeds hardened by cold weather or drought stress may not be fully controlled and regrowth may occur: increase spray solution (gallons per acre) and surfactant under these conditions.

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RATES^a AND TIMING FOR WEED CONTROL IN WHEAT AND BARLEY

WEED	Application to weed leaf stage	STATES			
		MN, ND, and SD	MT & WY	Southern ID CO & UT	WA, OR, & Northern ID
GRASSES:					
WILD OATS	1 - 4	1.0 - 1.2	1.2 - 1.5	1.3 - 1.5	1.5 ^b
Roughstalk bluegrass	1 - 4	1.2	1.5	1.5	1.5
BROADLEAVES:					
Wild mustard	1 - 6	1.0	1.2	1.3	1.5
London rocket	1 - 6	1.0	1.2	1.3	1.5
Field pennycress	1 - 4	1.2	1.5	1.5	1.5
Flixweed	1 - 4	1.2	1.5	1.5	1.5
Tansymustard	1 - 6	1.2	1.5	1.5	1.5
^c Catchweed bedstraw	1 - 3	1.5	1.5	1.5	1.5
^c Tartary buckwheat	1 - 3	1.5	1.5	1.5	1.5
^c Wild buckwheat	1 - 3	1.5	1.5	1.5	1.5

^a When two or more weed species are present, use the recommended rate to control the more difficult to control weed. When a rate range is possible, use the higher rate when weed density is high and/or weeds are large.

^b In Northern Idaho a rate of 1.3 to 1.5 pints/acre of ASSERT may be applied to spring wheat or barley growing under favorable conditions.

^c When ASSERT is applied up to the 3 leaf stage, plants stop growing, resulting in a non-competitive plant.

HERBICIDE COMBINATIONS:

Mixtures of ASSERT and one or more of the following broadleaf herbicides may be tank mixed to obtain maximum wild oat and broadleaf control:

MCPA ester	2,4-D ester	Bromoxynil + MCPA ester (BRONATE)
GLEAN	ALLY	HARMONY EXTRA ^{3/}
FINESSE	HARMONY ^{3/}	CURTAIL M ^{4/}

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 (jointing) 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^{5/}, any product containing dicamba^{8/},
MCPA amine, or 2,4-D amine formulations. A waiting period of 4 days should be observed before applying any herbicide not listed as a tank mix partner.

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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/heat 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. Uniform spray coverage is required for maximum weed control.

Before applying ASSERT to sunflowers, thoroughly rinse and empty the spray tank of any herbicide containing solution. Then, wash all lines prior to adding ASSERT to the tank. Herbicide residues remaining in the spray tank can injure sunflowers at extremely low concentrations.

DO NOT tank mix insecticides with ASSERT in sunflowers.

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./acre) when the majority of wild mustard plants are in the rosette stage and prior to bloom.

For wild oat control apply ASSERT at 1.0 to 1.2 pints per acre (16 to 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 PROWL^{7/}, AMIBEN^{2/}, EPTAM^{6/}, TREFLAN^{4/}, or trifluralin^{1/}.

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.

1/Trifluralin, MCPA ester, 2,4-D ester, and Bromoxynil + MCPA ester are sold under various brand names.

2/BRONATE and AMIBEN are trademarks of Rhone Poulenc.

3/GLEAN, ALLY, HARMONY, HARMONY EXTRA, and FINESSE are trademarks of E.I. Du Pont de Nemours and Co., Inc.

4/CURTAIL M and TREFLAN are trademarks of The Dow/ELANCO Chemical Company.

5/BANVEL is a trademark of Sandoz Crop Protection Corp.

6/EPTAM is a trademark of ICI Americas, Inc.

7/PROWL is a trademark of American Cyanamid Company.

8/Dicamba is an active ingredient of various herbicides sold under various brand names.

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

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