

FEB 22 1999

Laura A. Sears
BASF Corporation
26 Davis Drive
P.O. Box 13528
Research Triangle Park, NC 27709-3528

Dear Ms. Sears:

Subject: Label Revisions
Guardzman Herbicide
EPA Registration No. 7969-146
Your Submission Dated February 3, 1999

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. The front panel referral statement says "See inside labeling for complete Precautionary Statements, Statement of Practical Treatment...." Please note that 40 CFR 156.10(i)(1)(ii) only allows that the Directions For Use may appear on printed or graphic matter which accompanies the pesticide. If all of the Precautionary Statements and First Aid Statements cannot appear on the container label due to size constraints, you should formally submit a request for a size exemption from the regulations.

b. On page two delete "Wash thoroughly with soap and water after handling". This statement duplicates the User Safety Recommendations.

c. The "Ground and Surface Water Advisory" heading should be moved to above the statement "Dimethenamid has properties that may result in groundwater contamination".

d. Refer to the enclosed PR Notice 83-3 for the required Pesticide Disposal statements. If wastes from this pesticide are hazardous or acutely hazardous, the pesticide can not be disposed of on site.

e. Since this product also contains atrazine, in the Mode of Action section also describe the mode of action for atrazine.

f. In the Crop Rotation section the term "any registered crop" is not clear. For clarity specify "corn and grain sorghum".

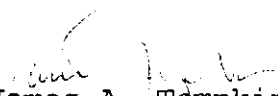
g. In the Crop Rotation section delete "if the combined rate exceeds the maximum rate per season". The directions for minimum application rate for two applications exceed the maximum rate per season.

h. Delete "This product cannot be used to formulate or reformulate any other pesticide product".

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

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

Sincerely yours,


James A. Tompkins
Product Manager (25)
Herbicide Branch
Registration Division (7505C)

Enclosure

**RESTRICTED USE PESTICIDE
DUE TO GROUND AND SURFACE WATER CONCERNS**

For retail sale to and use only by certified applicators or persons under their direct supervision, and only for those uses covered by the certified applicator's certification.

This product is a restricted use herbicide due to ground and surface water concerns. Users must read and follow all precautionary statements and instructions for use in order to minimize potential for atrazine to reach ground and surface water.

BASF

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RT 2-3-99
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**ACCEPTED
with COMMENTS
In EPA Letter Dated:
FEB 22 1999**

**Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.
~~7969-146~~**

Guardsman[®]

herbicide

For use in corn (field, pop, seed, and sweet) and sorghum (grain)

Active Ingredients:

| | |
|--|---------------|
| Dimethenamid* (2-chloro-N-((1-methyl-2-methoxy)ethyl)-N-(2,4-dimethyl-thien-3-yl)-acetamide) | 24.8% |
| Atrazine** (2-chloro-4-ethylamino-6-isopropyl-amino-s-triazine)..... | 28.4% |
| Inert Ingredients:** | 46.8% |
| Total | 100.0% |

* contains 2.33 pounds of dimethenamid and 2.67 pounds of (atrazine) per gallon
** contains petroleum distillates

EPA Reg. Number: 7969-146

EPA Est. Number: 55947-TX-1

KEEP OUT OF REACH OF CHILDREN.

WARNING/AVISO

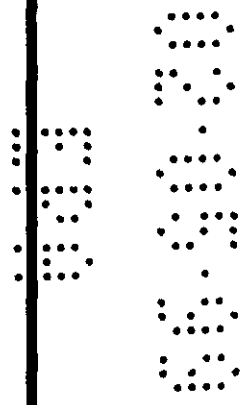
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

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

Net contents: 2.5 gallons (9.46 liters)

Shake before using.

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



Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing vapor or spray. Avoid contact with skin. Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals.

Statement of Practical Treatment

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

If swallowed: Call a doctor or get medical attention. Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Do not give anything by mouth to an unconscious person. Avoid alcohol.

If inhaled: Remove victim to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. Get medical attention.

If on skin: Wash with plenty of soap and water. Get medical attention.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage. May pose an aspiration pneumonia hazard.

Personal Protective Equipment (PPE)

Some materials that are chemical resistant to this product are listed below. For more options, refer to category C on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton \geq 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear

Mixers and loaders must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton \geq 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear

Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not re-use them. Follow the manufacturer's instructions for cleaning and 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

Atrazine is toxic to aquatic invertebrates. 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 washwaters or rinsate.

Dimethenamid has properties that may result in groundwater contamination. Application in areas where soils are permeable or coarse and groundwater is near the surface could result in groundwater contamination. Following application and during rainfall events that cause run-off, this chemical may reach surface water bodies including streams, rivers, and reservoirs.

Ground and Surface Water Advisory

Guardsman contains the active ingredient atrazine. Atrazine can leach through soil and has been found to result in contamination of water supplies by way of ground water. Therefore, growers are advised to avoid use of **Guardsman** in well-drained loamy sand to sand soils, particularly in areas having high groundwater tables.

Ground water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

- This product may not be mixed, loaded, or used within 50 feet of all wells including abandoned wells, drainage wells, and sinkholes.
- This product may not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes, and reservoirs.
- This product may not be applied aerially or by ground within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs.
- If this product is applied to highly erodible land, the 66-foot buffer or set-back from runoff points must be planted to crop or seeded with grass or other suitable crop.

Care must be taken when using this product to prevent 1) back siphoning into wells, 2) spills, or 3) improper disposal of excess pesticide, spray mixes, or rinsates.

Check valves or anti-siphoning devices must be used on all mixing equipment to prevent back-siphoning into wells or bulk storage tanks. Refer to **Storage and Disposal** regarding proper disposal of excess pesticide, spray mixes, and rinsates.

Tile-terraced Fields Containing Standpipes

To ensure protection of surface water from run-off through standpipes and tile outlets in terraced fields, one of the following options may be used:

- Do not apply this product within 66 feet of standpipes in tile-outletted terraced fields.

- Apply this product to the entire tile-outletted field and immediately incorporate it to a depth of 2-3" in the entire tile-outletted terraced field.
- Apply this product to the entire tile-outletted field under a no-till practice only when high crop residue management practices are used. High crop residue management practice is described as a crop management practice where little or no crop residue is removed from the field during or after crop harvest.

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.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed. This labeling must be in the user's possession during application.

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**.

Exception: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, PVC, or viton ≥ 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear

Storage and Disposal

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

Pesticide Storage: Do not use or store near heat or open flame. Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides. Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

Pesticide Disposal: Pesticide wastes are hazardous. Wastes resulting from this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Pesticide, spray mix, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures under Subtitle C of the Resource Conservation and Recovery Act.

Container Disposal:

• **Plastic or Metal Containers:** Triple rinse (or equivalent) and add rinsate to spray tank. 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.

• Bulk/Mini-bulk Containers:

Reusable containers should be returned to the point of purchase for cleaning and refilling because the container must be thoroughly cleaned before refilling.

Five Steps to Repackaging Minibulk Containers

While it is not required by the EPA currently, BASF has developed this mini-bulk checklist to aid in your inspection (**Steps 1-5**). We recommend that you complete these checklists every time a mini-bulk container is refilled and keep them on file.

Step 1. Inspect all mini-bulk tanks before filling with bulk products.

- _____ • Is the tank empty and clean (according to the current approved mini-bulk tank cleanout procedure), or does it contain only residue of the same BASF product with which it is about to be filled?
- _____ • Does the tank have a capacity greater than 55 gallons?
- _____ • Has the tank been inspected to be sure it is free of any punctures or structural defects?

Step 2. Inspect all tank valves, hoses, pumps, meter, and seals before filling with bulk product.

- _____ • Are all fittings free of visual signs of leaking or heavy wear?
- _____ • Are all fittings and plumbing clean (according to the currently approved mini-bulk tank cleanout procedure)?

Step 3. Label all tanks properly before filling with bulk product.

- _____ • Is there an up-to-date legible product label including **Directions For Use** displayed on the tank?
- _____ • Did you write the net contents (in gallons) on the product label after every refill?
- _____ • Did you write your EPA Establishment Number on the product label?

Step 4. Properly secure the tank to any vehicle prior to transportation.

Step 5. Maintain a file of the following items at the location where repackaging occurs.

- A copy of the manufacturer's cleanout procedure.
- A signed copy of the manufacturer's repackaging label authorization for this retail location.

Please post these instructions in an area visible by all employees and be sure to follow them prior to filling any mini-bulk tank. Leave all product and bar code labels in place. Product labels must remain in place to comply with Department of Transportation regulations. Return container promptly to distributor.

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:

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

Steps to be taken in case material is released or spilled:

Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal. Remove contaminated clothing, and wash affected skin areas with soap and water. Wash clothing before re-use. Keep the spill out of all sewers and open bodies of water.

I. General Information

Guardsman® herbicide is a selective pre-emergence herbicide for controlling most annual grasses, many annual broadleaf weeds, and sedges in field corn, seed corn, sweet corn, popcorn and grain sorghum.

Mode of Action

Guardsman contains dimethenamid, a root and shoot growth inhibitor, and atrazine, a photosynthetic inhibitor. **Guardsman** typically controls weeds before or soon after they emerge from the soil.

Herbicide Resistance

Naturally occurring biotypes of certain pests with resistance to the atrazine component in **Guardsman** are known to exist. Selection of resistant biotypes, through repeated use of atrazine or related triazine herbicides (same mode of action), 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.

Coverage

Soil must be uniformly covered with spray for pre-emergence control. Use higher volumes if dense leaf canopies are present at application.

Table 1. Weeds Controlled

Some weed species may have triazine-resistant biotypes that will not be controlled adequately by this product. If resistant biotypes are suspected, use an alternate program or use non-triazine products such as **Clarity® herbicide** in combination or sequentially with **Guardsman**.

| Annual Grasses | Annual Broadleaves |
|--------------------------------------|---------------------------------|
| Barnyardgrass | Buckwheat, wild |
| Crabgrass, large | Carpetweed |
| , smooth | Cocklebur ² |
| Cupgrass, southwestern | Eclipta ¹ |
| , woolly ¹ | Jimsonweed |
| Foxtail, giant | Kochia |
| , green | Lambsquarters, common |
| , yellow | Morningglory, annual |
| Goosegrass | Mustards |
| Johnsongrass (seedling) ² | Nightshade ² , black |
| Millet, wild proso ¹ | , eastern black |
| Oats, wild | , hairy |
| Panicum, fall | Pigweed, Amaranth, Palmer |
| , Texas ¹ | , prostrate |
| Red Rice | , redroot |
| Sandbur ¹ | , smooth |
| Shattercane ¹ | , tumble |
| Signalgrass, broadleaf | Purslane, common |
| Witchgrass | Pusley, Florida |
| Sedge | Ragweed, common |
| Flatsedge, rice | , giant ² |
| Nutsedge, yellow ² | Smartweed |
| | Spurge, nodding |
| | , spotted |
| | Velvetleaf ² |
| | Waterhemp, Common |
| | , Tall |

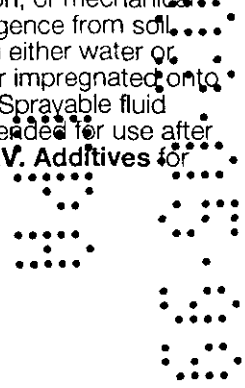
¹ partial control or suppression only. To complement control, **Guardsman** should be used in tank mixes or sequential applications with other herbicides that provide additional control of these weed species.
² For best control of these species, use the highest rate recommended by soil type. If dry conditions exist near application or excessive rainfall occurs early in season, a postemergence herbicide or cultivation may be required to help control these weeds.

Cleaning Spray Equipment

Clean application equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions before and after applying this product.

II. Application Instructions

Guardsman may be applied preplant surface, preplant incorporated, or pre-emergence to corn or grain sorghum; or may be applied early postemergence to corn. **Guardsman** will provide most effective weed control when applied (by ground or aerial equipment), and subsequently incorporated into soil by rainfall, sprinkler irrigation, or mechanical tillage prior to weed seedling emergence from soil. **Guardsman** may be applied using either water or fluid fertilizer as the spray carrier, or impregnated onto and applied with dry bulk fertilizer. Sprayable fluid fertilizer as a carrier is not recommended for use after crop emergence. Refer to section **IV. Additives** for more information.



Application Rate

Recommended ~~broadcast~~ use rates for **Guardsman® herbicide** when used alone, in tank mix, or sequential applications in corn are given in **Table 2** (refer to section **V. General Tank Mixing Information** and section **VII. Crop-Specific Information** for more details). Recommended use rates of this product vary by soil type. The most accurate indicator of appropriate use rate for **Guardsman** is the Cation Exchange Capacity (CEC) of the soil to be treated. CEC values are available in standard soil testing procedures. If CEC values are not available, the recommended use rate of **Guardsman** may be determined using the soil texture and organic matter. Soil texture groupings used in this label are coarse (sand, loamy sand, sandy loam), medium (silt, silt loam, loam, sandy clay loam), and fine (sandy clay, silty clay, silty clay loam, clay loam, and clay). To determine **Guardsman** use rates by either soil CEC values or by soil texture and organic matter, refer to **Table 2**. When use rates are expressed in ranges, use the lower rates for lower CEC values and use the higher rates for higher CEC values. If soil texture and organic matter content are used to determine use rates, use the lower rates for more coarsely textured soils low in organic matter and use the higher rates for more finely textured soils that are high in organic matter.

Table 2. Guardsman Application Rates Per Acre^{1,2}

| As Determined By Cation Exchange Capacity (CEC) of the Soil | | |
|--|-----------------------------|--|
| Cation Exchange Capacity (CEC) of Soil | Guardsman Use Rate Per Acre | |
| < 5 | 3-3.5 pints | |
| 5-9 | 3.5-4 pints | |
| 10-14 | 4-4.5 pints | |
| 15-20 | 4.5-5 pints | |
| > 20* | 4.75-5 pints | |

| As Determined By Soil Texture and Organic Matter Content | | |
|---|------------------------|-------------------------|
| Soil Texture | Organic Matter Content | |
| | Less than 3% | 3% or more ³ |
| Coarse | 3-3.5 pints | 3.5-4.5 pints |
| Medium | 3.5-4.5 pints | 4.5-5 pints |
| Fine | 4.5-5 pints | 4.75-5 pints |

¹ The rates listed are intended for full season control of targeted weeds. Reduced rates (2-3.5 pints of **Guardsman** per acre) may be used where partial control or reduced length of soil residual control is required, such as postemergence applications, or pre-emergence applications where cultivation or sequentially applied herbicides will be used for added control of the same targeted weed species. Use 2-2.5, 2.5-3, and 3-3.5 pints of **Guardsman** per acre on coarse, medium, and fine soil respectively.

² For all early preplant applications, use 4.75-5 pints of **Guardsman** per acre. Do not exceed 4.75 pints per acre on highly erodible soils with less than 30% plant residue cover prior to crop emergence.

³ On all soils with 8-20% organic matter, use 4.75-5 pints of **Guardsman** per acre. **Guardsman** is not recommended for use on soils with more than 20% organic matter.

Application Timing

Preplant Surface Applications: For use in minimum tillage or no-tillage production systems, apply **Guardsman** alone or in tank mixes up to 45 days before planting. When making early preplant applications (15-45 days prior to planting), use the highest rate recommended for the specific soil type. Early preplant applications are not recommended for use on coarse-textured soils or in areas where average annual rainfall (or rainfall + irrigation) typically exceeds 40". Early preplant applications may be applied as part of a split application program where the second application is made after planting (use 2/3 of **Guardsman** rate early followed by 1/3 of rate after planting). A split application is recommended when the initial application is made more than 30 days prior to planting. Tank mixes with postemergence herbicides such as **Banvel®**, **Clarity®**, **Gramoxone® Extra**, **Roundup Ultra®**, or **Touchdown®** must be used when weeds are present more than 1.5" tall at the time of application.

Preplant Incorporated Applications: Apply **Guardsman** and incorporate into the upper (1-2") soil surface up to 2 weeks before planting. Use a harrow, rolling cultivator, finishing disk, or other implement capable of giving uniform shallow incorporation. Avoid deeper incorporation or reduced weed control may result.

Pre-emergence Surface Applications: Broadcast treatment uniformly to the soil surface after planting and before crop emergence. Rainfall, sprinkler irrigation, or shallow mechanical incorporation after application is required to move this product into the upper soil surface where weed seeds germinate. If adequate rainfall or irrigation does not occur and weed seedling emergence begins, a shallow cultivation or rotary hoeing will improve performance.

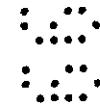
Early Postemergence Applications: **Guardsman** may be applied early postemergence to corn up to 8" tall. Apply **Guardsman** before weeds are greater than 1.5" tall or in a tank mix with products that control emerged weeds. Do not apply to grain sorghum after crop emergence.

Managing Off-target Movement

Spray Drift: High or gusty winds, high temperatures, low humidity, and temperature inversions increase the likelihood of spray drift from intended targets. Do not apply when these conditions exist. To minimize spray drift:

- Make application when conditions are favorable for even spray deposition (approximately 3-10 mph) on the soil surface. Do not apply when wind or wind gusts exceed 15 mph.
- Use low pressure, properly calibrated, application equipment as possible to produce large spray droplets and sufficient spray volume to ensure uniform application. Do not use nozzles producing a mist droplet spray.
- Keep ground driven spray boom as low as possible above the target surface.

Wind erosion of treated soil: Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.



Aerial Application

Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Adequate spray volume must be used to provide accurate and uniform distribution of spray particles over the treated area and to avoid drift of spray particles to nontarget areas.

Application Equipment: Use nozzle screens no finer than 50 mesh when spraying tank mixtures with wettable powder or flowable formulations.

The 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.

Ground Application (Banding)

When applying **Guardsman** herbicide by banding, determine the amount of herbicide and water volume needed using the following formula:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \frac{\text{Broadcast rate}}{\text{per acre}} = \frac{\text{Banding herbicide}}{\text{rate per acre}}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \frac{\text{Broadcast volume per acre}}{\text{volume per acre}} = \frac{\text{Banding water}}{\text{volume per acre}}$$

Ground Application (Broadcast)

Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Adequate spray volume must be used to provide accurate and uniform distribution of spray particles over the treated area and to avoid drift of spray particles to nontarget areas.

Application Equipment: Use nozzle screens no finer than 50 mesh when spraying tank mixtures with wettable powder or flowable formulations.

Ground Application (Dry Bulk Fertilizer)

Guardsman may be impregnated or coated onto dry bulk granular fertilizer carriers for preplant surface, preplant incorporated, or pre-emergence applications. Impregnation or coating may be conducted by either the in-plant bulk system or the on-board system.

Guardsman may also be applied in herbicide tank mixes where the tank mix companion product is also registered for these application systems. Individuals or agents selling **Guardsman** in these application systems are responsible for following all state and local regulations regarding fertilizer and herbicide blending. The addition of a drying agent may be necessary if the fertilizer and herbicide blend is too wet for uniform application due to high humidity, high urea concentration, or low fertilizer use rate. Slowly add the drying agent to the blend until a flowable mixture is obtained. Drying agents are not recommended for use with on-board impregnation systems. Under some conditions, fertilizer impregnated with **Guardsman** may clog air tubes or deflector plates on pneumatic application systems. Mineral oil may be added to **Guardsman** before blending with fertilizer to reduce plugging. Do not use drying agents when mineral oil is used. To avoid separation of **Guardsman** and mineral oil mixes in cold temperatures, either keep mixture heated or agitated prior to blending with fertilizer. Mineral oil may be used at in-plant blending stations or on-board injection systems.

Apply 200-750 pounds of fertilizer and herbicide blend per acre. Application must be made uniformly to the

soil to prevent possible crop injury and offer satisfactory weed control. Impregnated fertilizer spread at half rate and overlapped to obtain a full rate will offer a more uniform distribution. A shallow (1-2") incorporation is desirable for improved weed control. Deeper incorporation may result in unsatisfactory weed control.

Formula to determine the herbicide rate when using dry bulk fertilizer applications:

$$\frac{\text{Pints or pounds of herbicide per acre}}{\text{pounds of fertilizer per acre}} \times 2,000 = \frac{\text{Pints or pounds of herbicide per}}{\text{ton of fertilizer}}$$

Incompatible Mixtures

Do not impregnate **Guardsman** or **Guardsman** mixes on ammonium nitrate, potassium nitrate, or sodium nitrate fertilizers or fertilizer blends. Single superphosphate (0-20-0) and triple superphosphate (0-46-0) may be impregnated only with **Guardsman** alone.

III. Additives

Spray adjuvants have little or no influence on performance of **Guardsman** when applications are made prior to weed emergence. To improve burndown of emerged weeds, surfactants or low-rate fertilizer (28%, 30%, or 32% UAN or ammonium sulfate), or crop oil concentrate may be used with **Guardsman** alone or in tank mixes applied preplant, pre-emergence, or early postemergence to the crop. Consult your local BASF representative for recommendations for your area.

Nitrogen Source

- **Urea ammonium nitrate (UAN):** Use 2-4 quarts of UAN (commonly referred to as 28%, 30%, or 32% nitrogen solution) per acre. Do not use brass or aluminum nozzles when spraying UAN.
- **Ammonium sulfate (AMS):** AMS at 2.5 pounds per acre may be substituted for UAN. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as those mentioned. BASF does not recommend applying AMS if applied in less than 10 gallons per acre because of potential problems with precipitation in reduced volumes. Use AMS only if it has been demonstrated to be successful in local experience.

Nonionic Surfactant

The standard label recommendation is 1 pint of an 80% active nonionic spray surfactant per 100 gallons of water.

Oil Concentrate

Crop oil concentrates are allowed after crop emergence only when **Guardsman** is used alone or in tank mixes with atrazine. See the manufacturer's label for specific rate recommendations. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all of 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 products will vary; however, vegetable and petroleum oil concentrates should contain emulsifiers to provide good mixing.

quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. For additional information, see **Compatibility Test for Mix Components**.

Table 3. Additive Rate

| Additive | Rate Per Acre |
|----------------------|---------------------------|
| Nonionic Surfactant | 1-2 pints per 100 gallons |
| AMS | 2.5 pounds |
| UAN Solution | 2-4 quarts |
| Crop Oil Concentrate | 1 quart* |

* see manufacturer's label for specific rate recommendations

~~The use of adjuvants containing penetrants such as petroleum based oils after corn emergence may cause crop injury.~~

Compatibility Test for Mix Components

Add components in the following sequence using 2 teaspoons for each pound or 1 teaspoon for each pint of recommended label rate per acre.

- 1) Water (or sprayable fluid fertilizer if used as the carrier):** — For 20 gallons per acre spray volume, use 3.3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Use water from the intended source at the source temperature.
- 2) Products in PVA bags:** Cap the jar and invert 10 cycles.
- 3) Water-dispersible products:** — such as **Guardsman** (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions) Cap the jar and invert 10 cycles.
- 4) Water-soluble products:** Cap the jar and invert 10 cycles.
- 5) Emulsifiable concentrates:** — (oil concentrate or methylated seed oil when applicable) Cap the jar and invert 10 cycles.
- 6) Water-soluble additives:** — (AMS or UAN when applicable) Cap the jar and invert 10 cycles.
- 7) Let the solution stand for 15 minutes.
- 8) Evaluate** the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, do not mix the ingredients in the same tank.

IV. Mixing Order

- 1) Water:** Begin by agitating a thoroughly clean sprayer tank half full of clean water. Maintain constant agitation during complete mixing procedure.
- 2) Products in PVA bags:** Rinse the tank thoroughly before adding any material in PVA bags. Wait until all water-soluble PVA bags have fully dissolved and the herbicide is evenly mixed in the spray tank before continuing.
- 3) Water-dispersible products: (Guardsman, dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)**
- 4) Water-soluble products:**
- 5) Emulsifiable concentrates** (oil concentrate or

methylated seed oil when applicable)

6) **Water-soluble additives** (AMS or UAN when applicable)

7) Remaining quantity water

Maintain constant agitation during application. For more information, refer to section **V. Tank Mixing Application**.

V. General Tank Mixing Information

Guardsman® herbicide may be tank mixed or applied sequentially with one or more of the following herbicide products according to the specific tank mixing instructions in this label and respective product labels. Refer to section **VII. Crop-Specific Information** to determine which tank mix products can be applied to specific crops. Read and follow the applicable **Restrictions and Limitations** and **Directions For Use** on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

Tank Mix Partners/Components

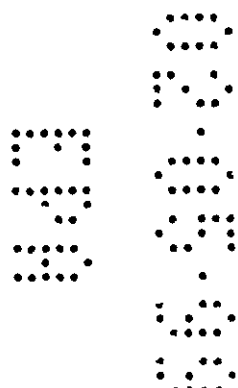
The following products may be tank mixed with **Guardsman** according to the specific tank mixing instructions in this label and respective product labels.

- **Accent®** (nicosulfuron)
- **Accent Gold®** (nicosulfuron + rimsulfuron + flumetsulam + clopyralid)
- **Atrazine**
- **Balan™** (benofin)
- **Balance™** (isoxaflutole)
- **Banvel®** (dicamba)
- **Basagran®** (bentazon)
- **Basis Gold®** (nicosulfuron + rimsulfuron + atrazine)
- **Beacon®** (primisulfuron)
- **Bladex®** (cyanazine)
- **Celebrity®** (dicamba + nicosulfuron)
- **Clarity®** (dicamba)
- **Cyclone®** (paraquat)
- **Eradicane®** (EPTC)
- **Fallow Master®** (glyphosate + dicamba)
- **Frontier®** (dimethenamid)
- **Gramoxone® Extra** (paraquat)
- **Hornet™** (flumetsulam + clopyralid)
- **Laddok® S-12** (bentazon + atrazine)
- **Landmaster®** (glyphosate + 2,4-D)
- **Liberty®** (glufosinate)
- **Lightning®** (imazethapyr + imazaapyr)
- **Marksman®** (dicamba + atrazine)
- **Peak®** (prosulfuron)
- **Permit®** (halosulfuron)
- **Princep®** (simazine)
- **Prowl®** (pendimethalin)
- **Pursuit®** (imazethapyr)
- **Python®** (flumetsulam)
- **Roundup Ultra® RT** (glyphosate)
- **Roundup Ultra®** (glyphosate)
- **Sutan®+ (butylate)**
- **Touchdown®** (sulfosate)
- **2,4-D**
- **Weedmaster®** (dicamba + 2,4-D)

Physical incompatibility, reduced weed control, or crop injury may result from mixing **Guardsman** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Local agricultural authorities may be a source of information when using other than BASF recommended tank mixes.

VI. General Restrictions and Limitations - All Crops

- **Restricted Use Pesticide:** This product is a restricted use herbicide due to ground and surface water concerns. Users must read and follow all precautionary statements and instructions for use in order to minimize potential for atrazine to reach ground and surface water.
- **Maximum seasonal use rate:** Do not apply more than a **total of 5 pints of Guardsman® herbicide** (80 fluid ounces) per acre, per season. **Guardsman** contains 2.67 pounds of the active ingredient atrazine per gallon (0.334 pounds of a.i. per pint). When tank mixing or making sequential applications with atrazine, **Marksman®**, **Laddok® S-12**, or other product containing atrazine, do not exceed the following total combined amounts of atrazine:
 - **Prior to crop emergence:** Do not exceed 1.6 pounds of atrazine a.i. per acre on highly erodible soils with less than 30% plant residue cover. Do not exceed 2.0 pounds of atrazine a.i. per acre on other soils.
 - **After crop emergence:** Do not exceed 2.0 pounds of atrazine a.i. per acre on any soil.
 - **Prior to and after crop emergence (sequential applications):** Do not exceed 2.5 pounds of atrazine a.i. per acre on any soil.
- **Preharvest Interval (PHI):** Refer to section **VII. Crop-Specific information** for crop-specific preharvest intervals and feeding and grazing restrictions.
- **Restricted Entry Interval (REI): 12 hours.**
- The New York State Department of Environmental Conservation prohibits use in Long Island, NY.
- **Crop Rotation Restriction:**
 - If the ~~corn or grain sorghum~~ crop treated with **Guardsman** is lost to adverse weather or for other reasons, the area treated may be replanted to ~~either of these~~ any registered crop immediately. If the original **Guardsman** treatment was broadcast, do not make a second application of **Guardsman** if the combined rate exceeds the maximum rate per season.
 - If the original application was banded and the second crop is planted in the row middles, a second band application may be applied.
 - Corn, sorghum, soybeans, cotton or peanuts may be planted the year following treatment. Injury may occur to soybeans planted on soils having a calcareous surface layer. ~~Do not graze or feed forage or fodder from cotton gin byproducts to livestock.~~
 - Do not plant sugarbeets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small seeded legumes and grasses the year following application, or injury may occur.
- ~~**Rainfast period:** Rainfall or irrigation occurring within 4 hours after postemergence applications may reduce the effectiveness of **Guardsman**.~~
- **Stress:** Do not apply to crops under stress such as stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures, as ~~unsatisfactory control or crop injury~~ may result.
- Do not apply through any type of **irrigation** equipment. Do not contaminate irrigation ditches or water used for domestic purposes.
- This product cannot be used to **formulate** or reformulate any other pesticide product.



VII. Crop-Specific Information

Corn

FIELD, POP, SEED, AND SWEET:

Guardsman® herbicide may be applied preplant surface, preplant incorporated, pre-emergence, or postemergence to corn up to 8" tall. Corn in this label refers to field corn (grown for grain, silage, or seed), sweet corn (not including sweet corn grown for seed), and popcorn. Before applying **Guardsman** to seed corn, sweet corn, or popcorn, verify with your local seed company (supplier) the **Guardsman** selectivity on your inbred line or variety to help avoid potential injury to sensitive varieties.

Refer to section II. **Application Instructions** to determine **Guardsman** use rates by soil type and use pattern.

Corn may be grazed or fed to livestock 40 days or more after application of **Guardsman**. Sweet corn ears may be harvested 50 days or more after application of **Guardsman**.

Corn Tank Mixes

Guardsman may be tank mixed or applied sequentially in corn with one or more of the following herbicide products according to the specific tank mixing instructions in this label and respective product labels. Read and follow the applicable **Restrictions and Limitations** and **Directions For Use** on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

- Accent®
- Accent Gold®
- Atrazine
- Balance®¹
- Banvel®
- Basagran®
- Basis Gold®
- Beacon®
- Bladex®
- Celebrity®
- Clarity®
- Eradicane®
- Frontier®²
- Gramoxone® Extra
- Homet™
- Laddok® S-12
- Liberty®³
- Lightning®⁴
- Marksman®
- Princep®
- Prowl®
- Pursuit®⁴
- Python®
- Roundup Ultra®⁵
- Sutan®+
- Touchdown®
- 2,4-D

¹ To improve weed control of some species, particularly velvetleaf, tank mix 1-1.5 ounces of **Balance** per acre with the recommended rate of **Guardsman**.

² Do not exceed a total of 1.5 pounds a.i. of dimethenamid per crop season.

³ Use only in **Liberty Link** (glufosinate tolerant) corn hybrids.

⁴ Use only in **IMI** (imidazolinone tolerant) corn hybrids.

⁵ includes postemergence tank mixes on **Roundup Ready** (glyphosate tolerant) corn hybrids.

Sorghum (grain)

Guardsman may be applied preplant, preplant incorporated, or pre-emergence to grain sorghum. Do not apply to grain sorghum after crop emergence.

All **Guardsman** applications must only be made to sorghum seed that has been properly treated by the seed company with an approved chloroacetamide herbicide safener or severe injury may occur.

Refer to section II. **Application Instructions** to determine **Guardsman** use rates by soil type and use pattern. Do not use **Guardsman** on sorghum planted in coarse-textured soil.

For best performance make pre-emergence surface applications within 5 days of the last preplant tillage. ~~If weeds have emerged, apply **Guardsman** with contact herbicides to control the emerged vegetation.~~ If grasses have emerged, **Guardsman** must be applied before they reach the 2-leaf stage or must be used in combination with an effective postemergence herbicide.

For best weed control for sorghum produced under irrigation, use a minimum of 3.5 pints per acre.

Under high soil moisture or cool conditions,

Guardsman application may cause temporary stunting or leaf wrinkling of sorghum. Sorghum will normally outgrow these symptoms in 10-14 days.

Guardsman is not registered for use on sweet or forage sorghum.

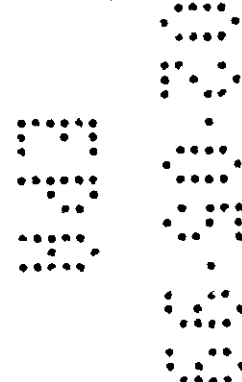
Sorghum forage may be grazed or fed to livestock 60 days or more after application of **Guardsman**. Grain and fodder may be harvested and fed 80 days or more after application of **Guardsman**.

Sorghum Tank Mixes

Guardsman may be tank mixed or applied sequentially in corn with one or more of the following herbicide products according to the specific tank mixing instructions in this label and respective product labels. Read and follow the applicable **Restrictions and Limitations** and **Directions For Use** on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

- Atrazine
- Clarity®
- Cyclone®
- Fallow Master®
- Gramoxone® Extra
- Landmaster®
- Peak®
- Roundup Ultra®
- Roundup Ultra® RT

In addition to the tank mixes listed, **Guardsman** can be used in sequential applications with other herbicides labeled for use in grain sorghum such as: **Basagran**®, **Buctril**®, **Laddok**® S-12, **Marksman**®, **Permit**®, **Weedmaster**® or 2,4-D.



Crops:

This product can be used on the following crops:

**Corn (Field, Pop, Seed, and Sweet)
Sorghum, Grain**

Look inside for complete **Restrictions and Limitations** and **Application Instructions**.

Pests listed in this label:

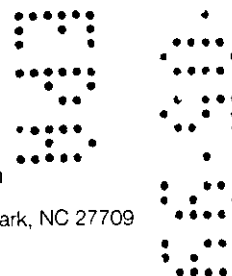
| Common Name | Scientific Name |
|-------------------------|--------------------------------|
| Barnyardgrass | <i>Echinochloa crus-galli</i> |
| Buckwheat, Wild | <i>Polygonum convolvulus</i> |
| Carpetweed | <i>Mullugo verticillata</i> |
| Cocklebur, Common | <i>Xanthium pensylvanicum</i> |
| Crabgrass, Large | <i>Digitaria sanguinalis</i> |
| , Smooth | <i>Digitaria ischaemum</i> |
| Cupgrass, Southwestern | <i>Eriochloa gracilis</i> |
| , Woolly | <i>Eriochloa villosa</i> |
| Eclipta | <i>Eclipta alba</i> |
| Flatsedge, Rice | <i>Cyperus iria</i> |
| Foxtail, Giant | <i>Setaria faberi</i> |
| , Green | <i>Setaria viridis</i> |
| , Yellow | <i>Setaria lutescens</i> |
| Goosegrass | <i>Eleusine indica</i> |
| Johnsonweed | <i>Datura stramonium</i> |
| Johnsongrass (seedling) | <i>Sorghum halepense</i> |
| Kochia | <i>Kochia scoparia</i> |
| Lambsquarters, Common | <i>Chenopodium album</i> |
| Millet, Wild Proso | <i>Panicum miliaceum</i> |
| Morningglory, Annual | <i>Ipomoea hederacea</i> |
| Mustard species | <i>Sinapis arvensis</i> |
| Nightshade, Black | <i>Solanum nigrum</i> |
| , Eastern Black | <i>Solanum ptycanthum</i> |
| , Hairy | <i>Solanum sarrachoides</i> |
| Nutsedge, Yellow | <i>Cyperus esculentus</i> |
| Oats, Wild | <i>Avena fatua</i> |
| Panicum, Fall | <i>Panicum dichotomiflorum</i> |
| , Texas | <i>Panicum texanum</i> |
| Pigweed, Amaranth | <i>Amaranthus palmeri</i> |
| , Palmer | <i>Amaranthus blitoides</i> |
| , Prostrate | <i>Amaranthus blitoides</i> |
| , Redroot | <i>Amaranthus retroflexus</i> |
| , Smooth | <i>Amaranthus hybridus</i> |
| , Tumble | <i>Amaranthus albus</i> |
| Pusley, Florida | <i>Richardia scabra</i> |
| Purslane, Common | <i>Protulaca oleracea</i> |
| Red Rice | <i>Oryza sativa</i> |
| Ragweed, Common | <i>Ambrosia artemisifolia</i> |
| , Giant | <i>Ambrosia trifida</i> |
| Sandbur | <i>Cenchrus spp.</i> |
| Shattercane | <i>Sorghum bicolor</i> |
| Signalgrass, Broadleaf | <i>Brachiaria platphylla</i> |
| Smartweed species | <i>Polygonum spp.</i> |
| Spurge, Nodding | <i>Euphorbia nutans</i> |
| , Spotted | <i>Euphorbia maculata</i> |
| Velvetleaf | <i>Abutilon theophrastic</i> |
| Waterhemp, Common | <i>Amaranthus rudis</i> |
| , Tall | <i>Amaranthus tuberculatus</i> |
| Witchgrass | <i>Panicum capillare</i> |

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, 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 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 and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above. BASF MAKES NO OTHER EXPRESS 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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