



# BROADHEAD™

## HERBICIDE

**Intended for Use Only by Individuals/Firms  
Certified And/or Licensed as Pesticide  
Applicators**

**EPA Reg. No. 279-3366**

**EPA Est. 279-IL-1**

Active Ingredient: (1.0)	By Wt.
Carfentrazone-ethyl .....	3.9%
Quinclorac .....	66.1%
Other Ingredients: .....	30.0%
	100.0%

Contains 0.7 pounds of active ingredient per pound.  
U.S. Patent Pending

## KEEP OUT OF REACH OF CHILDREN CAUTION-PRECAUCION

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

### FIRST AID (2.0)

#### If on Skin or Clothing

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

#### If in Eyes

Hold eye open and rinse slowly and gently with water for 15- 20 minutes. Remove contact lenses, if present, after the first 5 minutes. Then continue rinsing eye. Call a poison control center or doctor for treatment advice.

#### If Swallowed

Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

#### If Inhaled

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

### HOTLINE NUMBER (3.0)

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

**See other sections for precautionary information.**

**ACTIVE INGREDIENT MADE IN CHINA AND FORMULATED AND  
PACKAGED IN UNITED STATES.**

**NET CONTENT: 5 lbs**

**Groups**

**4+14+26**

**Herbicide**

From



### ATTENTION

Although this label may appear similar to the label on a product you may have used, there may be important label differences. Users must read, understand and strictly follow all label directions, precautions and restrictions.

It is the user's responsibility to be sure the product is approved for sale or use on the intended crop and for use in the specific geographic area.

It is the user's responsibility to be aware of and to follow all State or local precautions or restrictions not appearing on this product label.

Prior to purchase or use of this product, read the Terms of Sale or Use and Limitation of Warranty and Liability on page 2 of this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

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### PRECAUTIONARY STATEMENTS (4.0)

#### Hazards to Humans and Domestic Animals (4.1)

**CAUTION** Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### Personal Protective Equipment (PPE) (4.2)

Applicators and other handlers must wear: long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, and shoes plus socks.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### Engineering Controls (4.3)

When handlers use closed systems, enclosed cabs, or aircraft or aircraft in a manner that meets the requirements listed in the Worker Protection Standards (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 remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Users should wash 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 (4.4)**

This pesticide is very toxic to algae and moderately toxic to fish. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

### **DIRECTIONS FOR USE (5.0)**

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the Agency responsible for pesticide regulation.

### **AGRICULTURAL USE REQUIREMENTS (5.1)**

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. These requirements 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.**

Personal Protective Equipment (PPE) required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is: Coveralls over long-sleeved shirt and long pants, chemical-resistant gloves made of any waterproof material, and shoes plus socks.

### **STORAGE AND DISPOSAL (5.2)**

Do not contaminate water, food or feed by storage and disposal. Do not use or store around the home.

#### **Pesticide Storage**

Store product in original container only, away from other pesticides, fertilizer, food or feed. Store in a cool, dry place and avoid excess heat.

#### **In Case of Spill**

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

#### **To Confine Spill**

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

#### **Pesticide Disposal**

Waste resulting from the use of this product must be disposed of at an approved waste disposal facility.

#### **Container Disposal**

**Plastic Non-refillable Containers:** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. 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.

**Returnable/Refillable Sealed Containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

### **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY (6.0)**

**Notice:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. 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 manner of use or application, weather or crop conditions beyond the control of FMC or Seller. All such risks shall be assumed by Buyer and User, and, to the extent consistent with applicable law, Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

**Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the Directions for Use when used in accordance with the directions under normal conditions of use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, FMC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, NOR ANY OTHER EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE SELECTION, PURCHASE, OR USE OF THIS PRODUCT. Any warranties, express or implied, having been made are inapplicable if this product has been used contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) seller or FMC, and, to the extent consistent with applicable law, buyer assumes the risk of any such use.**

To the extent consistent with applicable law, FMC or seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF FMC AND SELLER FOR ANY AND ALL CLAIMS. LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF FMC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

This Conditions of Sale and Limitation of Warranty and Liability may not be amended by any oral or written agreement.

### **RESISTANCE MANAGEMENT (7.0)**

Some weeds are known to develop resistance to herbicides that have been used repeatedly. While the development of herbicide resistance is well understood, it is not easily predicted. Therefore herbicides should be used in conjunction with the resistance management strategies in the area. Consult the local or State agricultural advisors for details. If

herbicide resistance should develop in the area, this product used alone may not continue to provide sufficient levels of weed control. If the reduced levels of control cannot be attributed to improper application techniques, improper use rates, improper application timing, unfavorable weather conditions or abnormally high weed pressure, a resistant strain of weeds may have developed.

To reduce the potential for weed resistance use this product in a rotation program with other classes of chemistry and modes of action. Always apply this product at the listed rates and in accordance with the use directions. Do not use less than listed label rates alone or in tank mixtures. Do not use reduced rates of the tank mix partner. For optimum performance, scout fields carefully and begin applications when weeds are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

## PRODUCT INFORMATION (8.0)

Broadhead Herbicide is for selective control of susceptible grasses and broadleaf weeds in dry seeded and water-seeded rice production. Broadhead Herbicide is to be mixed with adjuvants and other herbicides applied to rice.

Weed control is optimized when the product is applied to actively growing weeds up to 4 inches in height under favorable environmental conditions. Extremes in environmental conditions such as temperature, humidity; and soil conditions such as soil type and moisture; and cultural practices may affect the activity of Broadhead Herbicide. When Broadhead Herbicide is applied to the soil, soil moisture is essential, as well as for residual activity for foliar applications. Do not let fields to become dry. If fields do become dry, flush irrigate fields to reactivate Broadhead Herbicide before weeds are 1 inch tall.

### Crop Tolerance

Rice is tolerant to Broadhead Herbicide when it is used according to use directions in typical growing conditions. Post emergent applications should not be made within 6 to 8 hours of either rain or when heavy dew is present on the crop. Do not apply Broadhead Herbicide until rice fields are drained and the rice is at the 2 leaf stage in pinpoint or water seeded systems. If a heavy rain occurs after applying Broadhead Herbicide drain the excess water from the rice field to avoid possible rice injury. Some herbicidal symptoms may appear when using certain spray tank additives or under certain environmental conditions, however, rice usually recovers without significant stand or yield losses.

### Tank Mixtures

Broadhead Herbicide may be tank-mixed with other herbicides to control weeds not listed on this label or enhance residual and control of labeled weeds. Read and follow all manufacturers' label recommendations for the companion herbicide except for specific recommendations on this label.

### Tank Mix Compatibility Testing

When tank mixing other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately one-half (1/2) hour. If the mixture form precipitates or changes viscosity, it is not compatible and the tank mix combination should not be used.

## Mixing and Loading Instructions (9.0)

Fill the tank one-third (1/3) full with water. Start the agitation. Different formulation types should be added in the following order: dry flowables (DF), wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L), emulsifiable concentrates (EC), and spray adjuvants. Allow each product type to completely disperse before adding another. Continue agitation and fill tank to three-fourths (3/4) full, add the correct quantity of Broadhead Herbicide and mix thoroughly. Finally, add any solution (S) formulations or spray adjuvant, agitate and finish filling. Maintain agitation during filling and during application. If spraying and agitation must be stopped before the tank is empty, suspended materials may settle to the bottom. It is important to resuspend all of the settled material before continuing application. Carefully follow all mixing instructions for each material added to the tank. Initial dispersion of dry or flowable formulations can be improved by mixing with a small amount of water (slurrying) and pouring the slurry through a 20 to 35 mesh wetting screen in the top of the spray tank. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

Make sure Broadhead Herbicide is thoroughly mixed before application or before adding another product to the spray tank.

Use the Broadhead Herbicide spray mixture immediately after mixing. Do not store the sprayer overnight or for any extended period of time with the Broadhead Herbicide spray mixture remaining in the tank.

Do not premix Broadhead Herbicide spray solutions in nurse tanks.

If Broadhead Herbicide is tank mixed with other herbicides, all additional directions, restrictions and precautions for the tank mixture herbicides must be followed.

## Adjuvants Use Requirements (10.0)

Use adjuvant for post emergent applications only. Mix a quality nonionic surfactant (NIS) at 0.25% v/v (2 pints per 100 gallons of spray solution) having at least 80% active ingredient. For more active treatments, use a Crop Oil Concentrate (COC) at 0.5 to 1.0% v/v (one half to one

gallon per 100 gallons). Refer to the **Mixing and Loading Instructions** section of this label and the adjuvant label for tank mixing adjuvants with Broadhead Herbicide.

### Varieties or Cultivar Testing

Not all varieties or cultivars of labeled crops have been fully evaluated under all environmental and soil conditions. Consult University or local Extension specialists for additional and specific information. It may also be beneficial to conduct small on-farm trials under actual conditions with specific varieties or cultivars before treating large acreage.

## Spray Equipment Clean-Out (11.0)

Many new pesticides are very active at low rates, especially to sensitive crops. Residues left in mixing equipment, spray tanks, hoses, spray booms and nozzles can cause crop effects if they are not properly cleaned. As soon as possible after spraying Broadhead Herbicide and before using the sprayer equipment for any other applications, the sprayer equipment must be thoroughly cleaned using the following procedure. In addition, applicator must take appropriate steps to ensure proper equipment clean-out for any other products mixed with Broadhead Herbicide as required on the other product labels. More complete cleaning can be achieved if the spray system is cleaned immediately following the application.

1. Drain sprayer tank, hoses, spray boom and spray nozzles. Use a high-pressure detergent wash to remove physical sediment and residues from the inside of the sprayer tank and thoroughly rinse. Then, thoroughly flush sprayer hoses, spray boom and spray nozzles with a clean water rinse. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tips) separately in the ammonia solution of Step 2.

2. Next, prepare a sprayer cleaning solution by adding three gallons of ammonia (containing at least 3% active) per 100 gallons of clean water. Prepare sufficient cleaning solution to allow the operation of the spray system for a minimum of 15 minutes to thoroughly flush hoses, spray boom and spray nozzles.

3. Convenient and thorough cleaning of the sprayer can be achieved if the ammonia solution or fresh water is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.

4. Before using the sprayer, completely drain the sprayer system. Rinse the tank with clean water and flush through the hoses, spray boom, and spray nozzles with clean water. Remove and clean spray tips and all filters and screens (tank, spray hose and spray tip) separately in an ammonia solution.

5. Properly dispose of all cleaning solution and rinsate in accordance with Federal, State, and local regulations and guidelines.

Do not apply sprayer cleaning solutions or rinsate to sensitive crops.

Do not store the sprayer overnight or for any extended period of time with Broadhead Herbicide spray solution remaining in the tank, spray lines, spray boom plumbing, spray nozzles or strainers.

If the sprayer has been stored or idle, purge the spray boom and nozzles with clean water before beginning any application.

Should small quantities of Broadhead Herbicide remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. FMC accepts no liability for any effects due to inadequately cleaned equipment.

## Application Rates and Timing (12.0)

The following directions for the selection of Broadhead Herbicide application rates are critical to achieve maximum performance and to ensure maximum crops safety. The user is required to read and follow the specific Broadhead Herbicide use directions and restrictions as defined in this label. This response is governed by the Broadhead Herbicide application rate and the inherent crop sensitivity. The use directions have been designed to minimize the risk of adverse crop response while maintaining optimum weed control.

Apply Broadhead Herbicide to dry-seeded rice by ground or air at pre-emergence or post-emergence pre-flood. Broadhead Herbicide may be used pre-emergence, delayed pre-emergence prior to crop emergence or early post-emergence after the rice reaches the two leaf stage in drilled-seeded rice systems. Broadhead Herbicide applications are restricted to post-emergence after rice reaches its two leaf stage in water-seeded rice systems.

Do not apply when wind speed favors drift beyond the area intended for treatment or when environmental conditions exist for temperature inversions. Follow directions in **Spray Drift Management** section to minimize drift during applications.

### Ground Application

Utilize a boom and nozzle sprayer equipped with the appropriate nozzles, spray tips and screens and adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Utilize nozzles that produce minimal amounts of fine spray droplets to avoid spray drift or inadequate foliar and/or soil coverage. Apply a minimum of 10 gallons of finished spray per acre by ground. Be aware that overlaps and slower ground speeds while starting, stopping or turning while spraying may result in excessive application and subsequent crop response.



### Aerial Application

Use nozzle types and arrangements that will provide optimum coverage while producing a minimal amount of fine droplets. Apply sufficient spray volume to achieve adequate coverage. Apply a minimum of 5 gallons of finished spray per acre. Higher spray volumes may help reduce spray drift and increase spray coverage.

### Pre-emergent Soil Applications (12.1)

Apply Broadhead Herbicide with appropriate burndown herbicide in conservation tillage systems where weeds are present. Broadhead Herbicide can be applied to the soils surface before, during or after planting but before emergence of rice in dry-seeded rice culture. Moist soil is required for activation of Broadhead Herbicide. If fields become dry weed control will diminish. Keep fields moist by regular flush irrigating until permanent flood. If fields do become dry, flush irrigating fields may restore weed control to weeds that are 1 inch or less tall. Soil type and texture also affect performance of Broadhead Herbicide. Refer to the "Pre-emergence application rates per soil type in dry-seeded rice culture" Table for proper use rates by soil type and texture.

Pre-emergence application rates per soil type in dry-seeded rice culture		
Soil Texture	Broadhead Herbicide (lb ai/a)	Broadhead Herbicide (oz. product per acre)
Sand or loamy sand	DO NOT USE	-
Sandy loam	0.175 – 0.35	4.0 to 8.0
Loam, silt loam, silt, or sand clay or sandy clay loam	0.35 – 0.47	8.0 to 10.7
Silty clay loam, clay loam, clay loam or clay	0.47 – 0.53	10.7 to 12.1
Do not use pre-emergence in water-seeded rice systems		

### Post-emergent Pre-flood Applications (12.2)

Apply Broadhead Herbicide at 4.0 to 12.1 oz (0.175 up to 0.53 pound active ingredient) per acre. Apply when the rice is at the 2 leaf stage or larger, but prior to flooding, ideally not later than two days before flooding. For optimum results, Broadhead Herbicide should be applied to weeds up to 4 inches tall. Use a quality nonionic surfactant (NIS) at 0.25% v/v (2 pints per 100 gallons of spray solution) having at least 80% active ingredient. For more active treatments, use a Crop Oil Concentrate (COC) at 0.5 to 1.0% v/v (one half to one gallon per 100 gallons).

The series from coarse to fine as noted in the following Soil Classification Chart.

## SOIL CLASSIFICATION CHART

Table 1

COARSE	MEDIUM	FINE
Sand	Sandy clay loam	Silty clay loam
Loamy sand	Sandy clay	Silty clay
Sandy loam	Loam	Clay loam
	Silt loam	Clay
	Silt	

When used as directed Broadhead Herbicide will control the listed weeds.

For small weeds (less than 2 inches tall) use 4.0 to 12.1 oz/A (0.175 to 0.53 ai/A).

For larger weeds (between 3 and 4 inches) use 8.0 to 12.1 oz/A (0.35 to 0.53 ai/A).

## WEEDS LIST (13.0)

When Broadhead Herbicide is applied in accordance with the use directions on this label, Broadhead Herbicide applied alone or in recommended tank mixtures will provide control of the following weeds. Refer to the specific crop section.

Common Name	Scientific Name
Barleygrass	<i>Echinochloa crus-galli</i>
Broadleaf signalgrass	<i>Brachiaria platyphylla</i>
Common cocklebur	<i>Xanthium strumarium</i>
Common purslane	<i>Portulaca oleracea</i>
Cutleaf ground-cherry	<i>Physalis angulata</i>
Eclipta	<i>Eclipta alba</i>
Hemp sesbania	<i>Sesbania exaltata</i>
Hopornbeam copperleaf	<i>Acalypha ostryifolia</i>
Jointvetch species	<i>Aeschynomenes</i> spp.
Junglerice	<i>Echinochloa colonum</i>
Large crabgrass	<i>Digitaria sanguinalis</i>
Morningglory species	<i>Ipomoea</i> spp.
Pennsylvania smartweed	<i>Persicaria pennsylvanica laevigata</i>
Pigweed species	<i>Amaranthus</i> spp.
Redweed	<i>Melochia corchorifolia</i>
Spreading dayflower	<i>Commelina diffusa</i>
Water hyssop	<i>Bacopa rotundifolia</i>

\*for control of grasses and sedges not listed above (such as, panicum spp. and sprangletop spp.), tank mix with the appropriate post-emergence herbicide. Refer to the Tank Mix section of this label.

## SPRAY DRIFT MANAGEMENT (14.0)

Do not apply when wind speed is greater than 10 mph by ground. Do not apply when wind speed is greater than 8 mph by air. Do not apply when air temperatures exceed 90°F, or when environmental conditions exist for temperature inversions. Do not exceed spray pressures of 40 psi.

### AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications. These requirements do not apply to forestry applications, public health uses or to applications of dry materials.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
3. Observe the regulations of the State where applications are made.
4. Applicators must observe and abide by the requirements of the Spray Drift Management.

### Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage for pesticide performance. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions. (See information on Wind, Temperature and Humidity, and Temperature Inversions in subsequent sections).

### Controlling Spray Droplet Size

**Volume** – Use high flow rate nozzles to apply the greatest practical spray volume. Nozzles with higher rated flow generally produce larger droplets.

**Pressure** – When higher flow rates are needed, use higher flow rate nozzles rather than increasing spray pressure.

Do not exceed the nozzle manufacturer's recommended pressures. Lower pressure produces larger droplets in many types of nozzles.

**Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation** – For aerial application, the recommended practice is to orient nozzles so that the spray is released parallel to the airstream. This orientation usually produces larger droplets as compared to other nozzle orientations. Significant nozzle deflection from horizontal will reduce droplet size and increase drift potential.

**Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles for both ground and aerial applications. Solid stream nozzles oriented straight back usually produce the largest droplets and the lowest drift potential in aerial applications.

**Boom Length** – For some aerial use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height** – Aerial applications must not be made at a height greater than 10 feet above the top of the target plant canopy unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment** – When aerial applications are made with a cross-wind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by the path of the aircraft upwind. Swath adjustment or offset distance should increase when conditions favor increased drift potential (higher winds, smaller droplets, etc).

**Wind** – Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they may potentially affect spray drift.

**Temperature and Humidity** – When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions** – Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the low speed and variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common during conditions of limited cloud cover and little to no wind. They often begin to form as the sun sets and may often continue into the morning. The presence

of a temperature inversion may be indicated by ground fog. However if fog is not present, the movement of smoke from a ground source or an aircraft smoke generator can also identify inversions. Smoke that remains in layers and moves laterally in a concentrated cloud (under low speed wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas** – The pesticide must only be applied when the wind is blowing away from sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops).

#### **Off-Target Movement of Broadhead Herbicide**

Drift of dilute spray mixtures containing Broadhead Herbicide must be prevented. Observation of the preceding environmental conditions, correct application equipment design, calibration and application practices will significantly diminish the risk of off-target spray drift. Broadhead Herbicide can cause significant symptomology by drift on to sensitive crops and other plants. This symptomology may manifest initially as discreet, localized spots where contacted by Broadhead Herbicide drift mixtures. Depending on concentration of the spray solution and droplets size (effectively determining the dosage of Broadhead Herbicide) and also depending on the inherent sensitivity of the plants involved, these spots or lesions may or may not coalesce. These effects will usually not have lasting effects on plant growth, but will likely reduce the value of affected fruit or foliage where grade or quality is associated with appearance. In severe drift instances with particularly sensitive crops, defoliation of affected foliage could result. Failure to follow these guidelines and environmental prohibitions that then result in off-target movement or drift of Broadhead Herbicide on to unintended crops or plants, irrespective of severity, constitutes misapplication of this product. FMC accepts no responsibility or liability for potential crop effects that may result from such misapplication of Broadhead Herbicide.

#### **Endangered Species**

If endangered plant species occur in the proximity of the application site, the following mitigation measure is required to avoid adverse effects:

Leave untreated buffer zones 200 feet for aerial applications.

For ground applications, listed in the chart below, are the buffer zones required where indigenous endangered plant species are found.

<b>Buffers to Indigenous Endangered Plant Species</b>		
Broadhead Herbicide USE RATE (lb ai /a)	Low Spray Boom Buffer (ft.)	Low Spray Boom Buffer (ft.)
0.43	20	33
0.56	26	46

To determine whether your county has an endangered terrestrial plant species, consult <http://www.epa.gov/espp/usa-map.htm>. Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If the bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of terrestrial endangered plants occur in the area to be treated.

## **Restrictions (15.0)**

**Preharvest Interval (PHI):** Do not apply Broadhead Herbicide 60 days before harvest.

Do not apply in California and Florida.

Maximum Seasonal Use Rate: Do not apply more than 12.1 oz (0.53 lb ai/a) of Broadhead Herbicide per acre per season.

When tank mixing or applications containing Quinclorac, do not apply more than 0.5 lb ai/a of Quinclorac products per season.

When tank mixing or applications containing Carfentrazone, do not apply more than 0.138 lb ai/a of Carfentrazone products per season.

Do not apply Broadhead Herbicide to rice that is heading.

Do not use rice straw or processing by-products (such as chaff, hulls, etc.) as soil amendments or mulch for high-value crops such as bedding stock, vegetable transplants, or ornamental and fruit trees.

Do not use treated rice fields for the aquaculture of edible fish and crustaceans (crayfish).

Do not use water from rice cultivation after a Broadhead Herbicide application to irrigate any crop other than rice.

Do not use Broadhead Herbicide to formulate or reformulate any other pesticide product.

Do not apply this product through any type of irrigation system.

**State Specific Restrictions:** In Arkansas, applications of Broadhead Herbicide within the area of one-mile west of Highway #1 to one-mile east of Highway 163 from the Craighead/Poinsett County line to the Cross/Poinsett County line is prohibited. As well, aerial applications in the area of Poinsett County one-mile west of Highway #1 to two-miles west of Highway #1 and one-mile east of Highway # 163 to Ditch # 10, from the Craighead/Poinsett County line to the Cross/Poinsett County line are prohibited.

Check for additional State restrictions in Arkansas by contacting the Arkansas Plant Board or a representative for specific instructions for applying Broadhead Herbicide in Arkansas.

## **Crop Rotation Restrictions**

In the case of crop failure, only rice may be immediately replanted.

Minimum plant back except for rice is 12 months..

After 12 months, all other crops may be planted except:

Do not plant tomatoes or carrots for 24 months after Broadhead Herbicide application was made.

## **Soil Restrictions**

Do not use Broadhead Herbicide on precision-cut fields until the second rice crop as injury can occur.

Do not use Broadhead Herbicide on sand and loamy sand soils.

Do not apply to rice fields with a history of poor water-holding capacity (porous subsoil) as erratic weed control may result.

Do not apply Broadhead Herbicide on any rice soil that does not have an impermeable hard pan to provide good water-holding capacity.

## **Drift Restrictions**

Do not allow Broadhead Herbicide to drift outside the intended target areas.

Ground application: Do not apply when wind speed is greater than 10 mph.

Aerial application: Do not apply when wind speed is greater than 8 mph.

Temperature Inversions: Do not apply Broadhead Herbicide when air temperatures exceed 90°F.

## **LABEL TRACKING INFORMATION (16.0)**

Label Code: Broadhead Herbicide 10-02-09

### **FMC Corporation**

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