

# **ESTABLISHED TURF**

## General Information

### INFORMATION

This product is a selective postemergence product for control of annual and perennial broadleaf weeds and woody brush in rangeland and permanent pastures, pine plantations, and non-crop areas (including grazed areas within these sites) such as industrial sites, non-irrigation ditch banks, and rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads.

### USE PRECAUTIONS

NOTE: This product is NOT approved for use on plants grown for agricultural or commercial production (such as designated grazing areas) in the state of Arizona.

- Do NOT apply more than 2-2/3 pints of this product per acre per year.
- When applying this product, do NOT contaminate water used for domestic purposes or irrigation ditches.
- Do NOT apply this product through any type of irrigation system (i.e., chemigation).
- Do NOT apply this product in or around greenhouses.
- Do NOT allow spray drift to come in contact with or apply this product directly to susceptible broadleaf plants or broadleaf crops, including but not limited to the following: alfalfa, canola, cotton, edible beans, grapes, lentils, lettuce, melons, mustard, peas, potatoes, radishes, safflower, soybeans, sugar beets, sunflower, tobacco and tomatoes or other vegetable crops, flowers, fruit trees, ornamentals and shade trees.
- Do NOT store or handle other agricultural chemicals using this product's container.
- Do NOT apply other agricultural chemicals or pesticides with equipment used to apply this product until the equipment has been thoroughly cleaned (refer to the Sprayer Cleanup section under Mixing Instructions below for details).

- Do NOT harvest grass for hay or silage from treated areas within 7 days of application.
- Animals to be slaughtered for eat must be removed from treated forage areas at least two days before slaughter.

## AVOIDING INJURY TO NON-TARGET PLANTS

### Ground Applications

To minimize spray drift, apply this product in a total spray volume of 5 or more gallons per acre using spray equipment designed to produce large-droplet, low pressure sprays per ASAE S-572 standard. Refer to the spray equipment manufacturer's recommendations for detailed information on nozzle types, arrangement, spacing and operating height and pressure. Spot treatments should be applied only with a calibrated boom to prevent over application. Operate equipment at spray pressures no greater than is necessary to produce a uniform spray pattern. Operate the spray boom no higher than is necessary to produce a uniformly overlapping pattern between spray nozzles. Do not apply with hollow cone-type insecticide nozzles or other nozzles that produce a fine-droplet spray.

### Aerial Application

NOTE: In non-cropland areas (including rights-of-way), this product may be applied aerially only by helicopter. Do NOT apply this product to non-cropland areas using fixed-wing aircraft.

### Rangeland, Permanent Pastures and Pine Plantations

This product may be applied to rangeland, permanent pastures and pine plantations using either fixed wing aircraft or helicopter equipment; however, additional drift mitigation measures are required for fixed wing aircraft.

To minimize spray drift, apply this product in a total spray volume of 3 or more gallons per acre. Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high potential for temperature inversion. Spray drift from aerial application can be minimized by applying a coarse spray as per USDA

ARS/ PAASS; by using straight stream nozzles directed straight back; and by using a spray boom no longer than 75% the wing span or 85% of rotor width for the aircraft. For fixed wing aircraft, maximum speed during application is limited to 140 mph and application height above the vegetation canopy should not exceed 10 feet. Spray pattern and droplet size distribution can be evaluated by applying sprays containing a water-soluble dye marker or appropriate drift control agents over a paper tape (adding machine tape). Mechanical flagging devices may also be used.

† Indicates Suppression Only - Suppression is a reduction in weed competition (i.e., a reduction in population or vigor) as compared to untreated areas. The degree of weed control and duration of effect may vary with weed size, density, application rate, coverage, and growing conditions before, during and after treatment.

1) Includes biotypes that are herbicide resistant or tolerant.

2) To control these weeds, use the higher rates in the range listed.

3) When controlling kochia, adding a methylated seed oil surfactant (i.e., MSO or ESO) at a rate of 1 to 2 quarts per acre is recommended. Improved control for infestations of larger kochia plants at more advanced growth stages may be achieved by increasing the rate of this product to 1.5 to 2.0 pints per acre OR adding 1 to 2 quarts of 2,4-D and 1 to 2 quarts of methylated seed oil per acre.

### Management of Kochia Biotypes

Research indicates many biotypes of kochia may occur within a single field and while kochia biotypes can vary in their susceptibility to this product, in general all biotypes will be suppressed or controlled at the labeled rate of 2/3 pint per acre.

A shift to more tolerant biotypes within a field may occur if this product is applied at rates lower than recommended.

### Best Practices for Resistance Management

Extensive populations of dicamba-tolerant kochia have been identified in certain small grain and corn production regions (such as Chouteau, Fergus, Liberty, Toole, and Treasure counties in the state of Montana). For optimal control of dicamba-tolerant kochia in these counties, apply this product at the recommended rate of 2/3 pint per acre.

To minimize selection pressure and preserve the utility of this product for control of dicamba-tolerant kochia biotypes, this product should be rotated with products that do not contain dicamba.

### Application Timing

Only weeds that have emerged at the time of application will be controlled so be sure to apply to actively growing weeds. Weed control may be reduced and the risk of crop injury (at all stages of growth) may increase if extreme growing conditions (such as drought or near-freezing temperatures) occur prior to, at, or following application. Control may be decreased if target plant foliage is wet at the time of application. Applications of this product are rain-fast within 1 hour after application.

### Effect of Temperature on Herbicidal Activity

The herbicidal activity of this product is influenced by weather conditions.

Optimum herbicidal activity requires active plant growth and temperature between 55°F to 85°F. Reduced efficacy will occur when temperatures are below 45°F or above 85°F. Weed control and crop tolerance may be reduced if frost occurs before or shortly after application (3 days).

### Spray Coverage

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. For best results (and to minimize spray drift), apply in a spray volume of 5 gallons or more per acre by ground and 3 or more gallons of total spray volume per acre by air. Spray volume should be increased as weed density and vegetative canopy increase in order to obtain equivalent weed control, however, do not exceed 40 gallons per acre total spray volume. Rather than increasing boom pressure, decreased spraying speed or larger nozzle tips should be used to increase spray volume.

Use only nozzle types and spray equipment designed for herbicide application.

To reduce spray drift, be sure to follow the precautions in the section titled Avoiding Injury to Non-Target Plants above.

## Spot Treatments

Only apply using a calibrated boom sprayer or with a hand sprayer using the following directions: When using hand-held sprayers for spot applications, be sure to uniformly apply a rate equivalent to a broadcast application. Application rates in the table below are based on an area of 1,000 square feet.

Mix the amount of this product corresponding to the desired broadcast rate in one or more gallons of spray. To calculate the amount of this product required for larger areas, multiply the table value (fluid ounces or ml) by the area to be treated in “thousands” of square feet. An area of 1,000 square feet is approximately 10.5 x 10.5 yards (strides) in size.

For example: If the area to be treated is 3,500 square feet, multiply the table value by 3.5 (calc.  $3,500 \div 1,000 = 3.5$ ).

## Application Rates

In general, the application rates at the lower end of the recommended rate range will be efficacious when applied to susceptible weed species with young, succulent growth. Use the higher rates within the rate range when applying to less sensitive species, perennials, and under conditions where control is more difficult (e.g., when plants are stressed due to drought or extreme temperatures, in dense weed stands and/or the weeds are larger). Higher rates will also be needed to control or suppress weeds in areas where competition from crops is not present (e.g., fallow land).

Refer in the label for tank mix information.

## Limitations, Restrictions, and Exceptions

### ESTABLISHED TURF

(Including but not limited to: sod farms, residential lawns, golf courses, recreational, commercial and public turf areas.)

1) Do NOT apply more than 1-1/3 pints per acre to warm season turf species unless some injury can be tolerated. Do NOT apply this product to warm season turfgrasses while they are transitioning from winter dormancy to active growth in late winter or early spring as spring green-up can be significantly delayed. To

control winter annual broadleaf weeds, warm season turfgrass species (except St. Augustinegrass) may be treated with up to 1-1/3 pints per acre if warm season turfgrasses are completely dormant when making applications.

2) On bermudagrass, apply only at the 2/3 pint per acre rate and only if some injury can be tolerated.

3) Do NOT apply this product to St. Augustinegrass in the state of Florida. When applying to St. Augustinegrass in states other than Florida, do NOT make applications between April 1st and October 31st and do NOT apply more than 2/3 pint of this product per acre.

When using this product on a turf species not recommended in the label, a test to determine the suitability for such use should be made by treating a small area at a recommended rate. To determine if the treatment is safe for use on the target turf species, the test area should be observed for 30 days of normal growing conditions and if any signs of herbicidal injury are seen, the product should not be used. The user assumes the responsibility for any plant damage or other liability resulting from use of this product on turf species not recommended on the label.

#### Application Restrictions

- Do NOT apply more than 2-1/2 pints of this product per acre per year.
- Do NOT use this product on golf course putting greens or tees.
- Additional applications should not be made within 4 weeks of a previous application in order to minimize the potential for grass injury.
- Before applying this product to newly seeded turf, two or three mowings should be made.

#### Application Rates

In general, the application rates at the lower end of a recommended rate range will be efficacious when applied to susceptible weed species with young, succulent growth. Use the higher rates within the rate range when applying to less sensitive species, perennials, and under conditions where control is more difficult (e.g., when plants are stressed due to drought or extreme temperatures, in dense weed stands and/or the weeds are larger). Higher rates will also be needed to control or suppress

weeds not experiencing competition from other vegetation.

† Indicates Suppression Only – Suppression is a reduction in weed competition (i.e., a reduction in population or vigor) as compared to untreated areas. The degree of weed control

and duration of effect may vary with weed size, density, application rate, coverage, and growing conditions before, during and after treatment.

### Application Timing

Only weeds that have emerged at the time of application will be controlled so be sure to apply to actively growing weeds. Weed control may be reduced if extreme growing conditions (such as drought or near-freezing temperatures) occur prior to, at, or following application. Control may be decreased if target plant foliage is wet at the time application. Applications of this product are rainfast within 1 hour after application.

**IMPORTANT:** Spring green-up can be significantly delayed in warm season turfgrasses if this product is applied when the grasses are transitioning from winter dormancy to active growth in late winter or early spring. Warm season turfgrass species (except St. Augustinegrass) may be treated with up to 1-1/3 pints of this product per acre to control winter annual broadleaf weeds during winter if they are completely dormant when the applications are made.

### Application Instructions

Apply this product only to turfgrasses that are well established as a ground broadcast treatment or spot treatment using calibrated equipment designed to provide uniform coverage. Avoid overlapping of the spray pattern that could result in higher than recommended application rates.

### Standard Volume Broadcast Applications

Apply in a total spray volume of 20 or more gallons of total spray volume per acre (0.5 or more gallons of spray per 1,000 square feet). Spray volumes up to 200 gallons per acre may be used in situations where complete and uniform application must be assured (e.g., when this product is tank mixed with foliar fertilizers).

## Low Volume Broadcast Applications

Apply in 5 to 20 gallons of total spray mix per acre (1/8 to 1/2 gallon spray per 1,000 square feet) using low pressure and application equipment capable of delivering a uniform spray droplet. Adding a non-ionic surfactant at a rate of 1/4 to 1/2 pint per acre is suggested to improve spray coverage, with the higher rate of surfactant used for lower rates of this product and lower spray volumes.

### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

### Rates

[field\\_rates 0](#)

[field\\_rates 1](#)

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### Restricted Entry Interval

12 hours

### Timings

[Postemergence \(Weed\)](#)