

# **WHEAT, BARLEY, OATS AND TRITICALE - PHI: BEFORE HARVESTING OF GRAIN AND STRAW - VOLUNTEER POTATOES**

## General Information

## Product Information

StareDown herbicide is a selective postemergence product for control of annual and perennial broadleaf weeds and volunteer potatoes in wheat, barley, oats, or triticale not under seeded with a legume, field corn, sweet corn, grain sorghum, fallow cropland, and on-farm non-cropland.

## Product Precautions

- Avoid applications where proximity of susceptible crops or other desirable plants is likely to result in exposure to spray or spray drift.

## Product Restrictions

- Do not apply StareDown directly to, or otherwise permit it to come in direct contact with, susceptible crops or desirable plants including, but not limited to, alfalfa, canola, cotton, lettuce, edible beans, grapes, lentils, mustard, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tomatoes, or tobacco.
- Do not contaminate irrigation ditches or water used for domestic purposes.
- Maximum Application Rate: Do not apply more than 0.7 pints per acre of StareDown per growing season.
- Plant-back Restriction: If replanting is required, plant only those crops listed on the label or Federally approved supplemental labeling for StareDown within 120 days following application.
- Chemigation: Do not apply this product through any type of irrigation system.

## Management of Kochia Biotypes

Research has suggested that many biotypes of kochia can occur within a single field. While kochia biotypes can vary in their susceptibility to StareDown, all will be

suppressed or controlled by the 0.4 pint per acre labeled rate. Application of StareDown at rates below the 0.4 pint per acre rate can result in a shift to more tolerant biotypes within a field.

**Best Resistance Management Practice:** To preserve StareDown it is recommended to use only a single application per season for the control of kochia. Populations of dicamba tolerant kochia have been identified in certain small grain and corn production regions. In these areas, apply StareDown at a minimum rate of 0.4 pint per acre for optimal control of dicamba tolerant kochia. In addition, StareDown should be rotated with products that do not contain dicamba to minimize selection pressure.

Use of these practices will preserve the utility of StareDown for control of dicamba tolerant kochia biotypes.

**Ground Applications:** To minimize spray drift, apply StareDown in a total spray volume of 8 or more gallons per acre using spray equipment designed to produce large-droplet, low pressure sprays. Refer to the spray equipment manufacturer's instructions 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:** 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 at spray boom pressure no greater than 30 psi; by using straight-stream nozzles directed straight back; and by using a spray boom no longer than 3/4 the rotor or wing span of the aircraft. 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.

Do not apply under conditions of a low level air temperature inversion. A temperature inversion is characterized by little or no wind and lower air temperature near the ground than at higher levels. The behavior of smoke generated by an aircraft mounted device or continuous smoke column released at or near site of application will indicate the direction and velocity of air movement. A temperature inversion is indicated by layering of smoke at some level above the ground and little or no lateral movement.

### Application Directions

**Application Timing:** Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. Only weeds that are emerged at the time of application will be affected. Foliage that is wet at the time of application may decrease control. Applications of StareDown are rain-fast within 1 hour after application.

**Effect of Temperature on Herbicidal Activity:** Herbicidal activity of StareDown is influenced by weather conditions. Optimum activity requires active plant growth. The temperature range for optimum herbicidal activity is 55°F to 75°F. Reduced activity will occur when temperatures are below 45°F or above 85°F. Frost before application (3 days) or shortly after (3 days) may reduce weed control and crop tolerance.

**Application Rates:** Generally, application rates at the lower end of the specified rate range will be satisfactory for young, succulent growth of sensitive weed species. For less sensitive species, perennials, and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds) the higher rates within the rate range will be needed. Weeds growing in the absence of crop competition generally require higher rates to obtain satisfactory control or suppression.

**Coverage:** Apply in 3 or more gallons per acre by air or in 8 or more gallons per acre by ground equipment. Do not exceed 40 gallons per acre total spray volume. Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Inadequate spray volume and coverage may result in decreased weed control. As canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use larger nozzle tips or decrease spraying speed to

increase spray volume rather than increasing boom pressure. Refer to manufacturer's instructions for information on relationships between spray volume, and nozzle size and arrangement.

**Adjuvants:** Generally, this product does not require the use of an adjuvant to achieve satisfactory weed control when applied alone. However, the addition of an adjuvant may optimize herbicidal activity when applications are made (a) at lower carrier volumes, (b) under conditions of cool temperature, low relative humidity or drought, or (c) to small, heavily pubescent kochia. Adjuvants may be used when required by a tank mix partner. Follow all applicable directions on the label for the tank mix partner.

**Spot Treatments:** To prevent misapplication, spot treatments should be applied with a calibrated boom or with hand sprayers according to directions provided below.

**Hand-Held Sprayers:** Hand-held or backpack sprayers may be used for spot applications of StareDown if care is taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1,000 sq ft. The amount of StareDown (fl oz or ml) in the table should be mixed with 1 gallon or more of water and applied to an area of 1,000 sq ft. To calculate the amount of product required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in \"thousands\" of square feet, e.g., if the area to be treated is 3,500 sq ft, multiply the table value by 3.5 (calc.  $3,500 \div 1,000 = 3.5$ ). An area of 1000 sq ft is approximately 10.5 X 10.5 yards (strides) in size.

## Limitations, Restrictions, and Exceptions

### Wheat - Barley - Oats - Triticale

Apply as a broadcast postemergence treatment to actively growing wheat, barley, oats or triticale from the 2 leaf crop growth stage up to and including flag leaf emergence (Zadoks scale 39) for control of broadleaf weeds. Apply when weeds are actively growing, but before weeds are 8 inches tall or vining. For control of volunteer potatoes, apply before potato plants are 8 inches tall. Only weeds emerged at the time of treatment will be controlled. Extreme growing conditions such as drought or near freezing temperatures prior to, at, and following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. Do not use if cereal crop is underseeded with a legume.

Spot Application: Spot applications may be made, however, to prevent over-application spot treatments should be applied at rates and spray volumes equivalent to broadcast application. See instructions for Spot Application in Application Directions section.

- The 0.3 pint/acre rate will generally provide satisfactory control of kochia seedlings less than 4 inches tall (including ALS resistant biotypes). However, when conditions for control are less favorable, such as under drought or cool temperatures, the 0.4 pint/acre rate will provide more consistent control of kochia seedlings 1 to 4 inches tall. Control of small kochia with reduced rates will be more consistent if kochia is at least 1 inch tall. The 0.4 pint/acre rate should be used for optimal control of dicamba tolerant kochia populations (see “Management of Kochia Biotypes” in the Product Information section of the label).

#### Restrictions:

- Do not allow livestock to graze treated areas or harvest treated forage within 7 days of application.

#### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

#### Pre-Harvest Interval

40 days

#### Rates

[field\\_rates 0](#)

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#### Restricted Entry Interval

24 hours

#### Timings

[Postemergence \(Crop\)](#)

[Postemergence \(Weed\)](#)