WHEAT AND BARLEY

General Information

PRODUCT INFORMATION

Axial Bold Herbicide is a systemic, postemergence herbicide for the control of several grass weed species in all varieties of spring wheat (excluding durum), winter wheat, and barley.

Axial Bold Herbicide is rapidly absorbed by weed foliage and translocated to the growing points of leaves and stems where it inhibits the acetyl CoA carboxylase (ACCase) enzyme. Susceptible weed species generally stop growing within 48 hours of treatment, turn yellow within one to three weeks, and are completely controlled within three to five weeks.

Level and rate of control depend on weed species, growing conditions, crop competition, and spray coverage. Axial Bold Herbicide applied alone is not affected by rain falling 30 minutes or more after application. Although Axial Bold Herbicide does not control broadleaf weeds, it can be tank-mixed with a wide range of broadleaf herbicides to provide broad-spectrum one-pass weed control.

For disease and insect control, Axial Bold Herbicide can be tank-mixed with fungicides and insecticides.

Weed Resistance Management Practices
To reduce the potential for herbicide resistance issues, the end use product, Axial Bold Herbicide label contains the following label language that provides the user with information on resistant weed management. Axial Bold Herbicide is a Group 1 herbicide (ACCase-inhibitor mode of action). Some naturally occurring grass weed populations have been identified as resistant to herbicides with the ACCase-inhibitor mode of action. Selection of resistant biotypes, through repeated use of these herbicides in the same field or lower than labeled use rates, may result in weed control failures. A resistant biotype may be present where poor performance cannot be attributed to adverse environmental conditions or improper application methods. If resistance is suspected, contact your local Syngenta representative and/or agricultural advisor for assistance.

PRINCIPLES OF HERBICIDE RESISTANT WEED MANAGEMENT

Scout and know your field

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance management strategy. Ensure the weed management program will control all weeds present.

- Fields should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

Utilize non-herbicidal practices to add diversity

- Use diversified management tactics such as cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.

Use good agronomic practices, start clean and stay clean

- Use good agronomic practices that enhance crop competitiveness.

- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

**Difficult to control weeds**

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.

- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

**Do not overuse the technology**

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a different mode of action which provides overlapping spectrum for the difficult to control weeds.

**Scout and inspect fields following application**

- Prevent an influx of weeds into the field by controlling weeds in field borders.

- Scout fields after application to verify that the treatment was effective.

- Suspected herbicide resistant weeds may be identified by these indicators

  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;

  - A spreading patch of non-controlled plants of a particular weed species; and

  - Surviving plants mixed with controlled individuals of the same species.

- Report non-performance of this product to your Syngenta retailer, Syngenta representative, or call 1-866-Syngenta (866-796-4368). If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.
Prevent weed escapes before, during, and after harvest

- Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival. Consider harvest weed seed management and control weeds post-harvest to prevent seed production.

Resistant weeds

- Contact your local Syngenta representative, retailer, crop advisor or extension agent to determine if weeds resistant to the mode of action contained in this product are present in your area. Premixes are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredients in this product. If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tankmix with an additional different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

APPLICATION DIRECTIONS

Methods of Application

Applications with Axial Bold Herbicide alone or in tank-mixtures are permitted by ground and by air as specified in Crop Use Directions unless otherwise restricted in Restrictions and Precautions.

Application Equipment

- Configure spray equipment to provide accurate and uniform coverage of the target area and minimize potential for spray drift.

- To ensure accuracy, calibrate sprayer before each use.

- For information on spray equipment and calibration, consult spray equipment manufacturers and/or state directions.

- All ground and aerial application equipment must be properly maintained.
- 80° or 110° flat fan nozzles are recommended for optimum spray coverage. Follow the manufacturer’s specifications for pressure and screens. Do not use flood or hollow cone type nozzles.

- Use a screen or strainer with 16-mesh or coarser on the suction side of the pump. Do not place a screen in the circulation line unless using a roller or piston pump. Use 50-mesh or coarser screens between the pump and boom, and at the nozzles.

- Pumps must have capacity to maintain spray pressure and to maintain the product suspension through tank agitation.

A centrifugal pump is recommended with an agitation rate of 20 gal/minute/100 gal tank size. Agitation must be maintained during mixing and spraying.

**Application Volume and Spray Coverage**

- Thorough spray coverage of target weeds is essential for consistent control.

- For ground application, apply the spray mixture in a volume of 5–10 gal/A. Use 10 gal/A under dry conditions or dense weed populations. Avoid volumes greater than 10 gal/A, as reduced grass control may occur.

- Nozzles must be uniformly spaced along the boom to provide accurate and uniform coverage. Point the nozzles forward in the direction of travel at an angle of 45° for optimum coverage of grass weeds. Observe sprayer nozzles frequently during the spraying operation to ensure that the spray pattern is uniform.

- Base boom height for broadcast over-the-top application upon the free-standing height of the crop, not height above the soil surface, and set at least 12 inches above the crop.

- For aerial application, apply in a minimum spray volume of 5 gal/A. Avoid application under conditions where uniform coverage cannot be obtained.

- For aerial application, apply at a maximum height of 10 ft above the crop with low-drift nozzles and wind speed not exceeding 10 mph to help assure accurate application within the target area.

**COVER CROPS**
A cover crop can be an important tool for the overall farm cropping system. Cover crops are planted for conservation purposes, soil erosion control, soil health improvement, water quality improvement and weed management. A cover crop can be a single crop or a combination of crops, including grasses and/or broadleaf crops.

After harvest of an Axial Bold Herbicide treated crop, planting of a cover crop is allowed, provided the cover crop is not grazed or fed to livestock nor harvested for food. Terminate the cover crop through natural causes, for example, frost or intentional termination by herbicide application, crimping, rolling, tillage or cutting.

All possible cover crops or cover crop combinations have not been tested for tolerance to this product. Before planting the cover crop, determine the level of tolerance for the intended cover crops by conducting a field bioassay. Refer to Section 6.1 for instructions on how to conduct a field bioassay.

Field Bioassay for Cover Crops

A field bioassay is a method of determining if herbicide residues are present in the soil at concentrations high enough to adversely affect crop growth.

Conduct the field bioassay by planting several strips of the desired cover crop across the field which has been previously treated with Axial Bold Herbicide. Plant the cover crop strips perpendicular to the direction of the product application.

Locate the strips so that all the different field conditions are encountered, including differences in field terrain, soil texture, organic matter, pH, and drainage.

If the cover crop does not show adverse effects, for example, crop injury and/or stand reduction, the field can be planted to this cover crop. If injury and/or stand reduction are visible, wait two to four weeks for further herbicide degradation to occur and repeat the bioassay. Alternatively, select a different cover crop and repeat the bioassay. Only plant cover crops that show acceptable tolerance in the field bioassay.

RESTRICTIONS AND PRECAUTIONS

Use Restrictions
- DO NOT apply this product through any type of irrigation system.

Use Precautions
- Do not apply to a crop that is stressed by conditions, for example, frost, low fertility, drought, flooding, disease damage, or insect damage, as crop injury may result.
- Avoid large spray overlaps which result in excessive rates in the overlap areas.
- Avoid all direct or indirect contact, for example, spray drift, with crops other than those specified for treatment on this label, since injury may occur.
- Avoid application under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.
- To reduce spray drift, do not apply under windy conditions.
- Allow adequate distance between target area and desirable vegetation to prevent drift to nontarget areas.

Limitations, Restrictions, and Exceptions

Application Timing

For spring and winter wheat, apply from emergence to pre-boot stage.

For barley, from emergence to prior to the jointing stage. Do not apply after the jointing stage.

Use Directions

For optimum results, apply to actively growing weeds.

For Persian Darnel, Volunteer and Wild Oat, apply at the 1 to 6 leaf stage on main stem and prior to emergence of the 4th tiller.

For all other weeds apply at the 1 to 5 leaf stage on main stem. For optimum control, apply prior to emergence of the 3rd tiller.

Weed control following application of Axial Bold Herbicide alone or in combination with broadleaf herbicides can be reduced or delayed under conditions of stress, for example, drought, heat, insufficient fertility, flooding, and prolonged cool temperatures.

Grass escapes or re-tillering may occur if application is made during prolonged conditions of stress.
Optimum weed control will be obtained if application is delayed until the conditions of stress have ended and weeds are once again actively growing.

If a spray solution with liquid nitrogen fertilizer will be used, refer to Tank-Mix Combination of Axial Bold Herbicide with Liquid Nitrogen Fertilizer.

Tank-Mix Options or Sequential Application Options:
- Refer to Tank-Mix Combinations for tank-mix options.

Resistance Management:
- Refer to Section Weed Resistance Management Practices.

Precautions:
- Do not apply to a crop that is stressed by conditions, for example, frost, low fertility, drought, flooding, disease damage, or insect damage, as crop injury may result.
- Note: Weeds emerging after Axial Bold Herbicide application will not be controlled.
- Under certain environmental conditions, mixtures of Axial Bold Herbicide with liquid nitrogen fertilizers as a partial carrier may cause crop burn.

USE RESTRICTIONS

1) Refer to Use Restrictions for additional product use restrictions.
2) Maximum Single Application Rate: 15 fl oz/A
3) Maximum Annual Rate: 15 fl oz/A/year
   a. DO NOT exceed 0.062 lb ai/A/year of pinoxaden-containing products.
   b. DO NOT exceed 0.0825 lb ai/A/year of fenoxaprop-p-ethyl-containing products.
4) DO NOT make more than one application.
5) DO NOT treat wheat or barley underseeded to forages.
6) DO NOT allow spray to drift to adjacent fields seeded to crops other than wheat or barley.
7) Pre-harvest Interval (PHI):
   a. Straw, wheat and barley in the states of Minnesota, Montana, North Dakota and South Dakota: 60 days, all other states: 70 days
   b. Grain, wheat and barley in the states of Minnesota, Montana, North Dakota and South Dakota: 60 days, all other states: 70 days

Method
Pre-Harvest Interval

Minnesota, Montana, North Dakota and South Dakota: 60 days
All other states: 70 days

Rates

field_rates 0

Restricted Entry Interval

48 hours

Timings
Postemergence (Weed)
Postemergence (Weed)
Postemergence (Weed)