CITRUS FRUIT - BROWN SPOT, ETC.

General Information

Product Information

Headline SC, a suspension concentrate (SC), contains the active ingredient pyraclostrobin, a member of the strobilurin class of chemistry derived from a natural antifungal substance. Preventive applications optimize disease control, resulting in improved plant health. Overall increased plant health may result in an improvement in crop growth and crop quality as well as increased crop yields.

Information regarding the contents and levels of metals in the product is available on the Internet at http://www.aapfco.org/metals.htm.

To maximize disease control, apply Headline SC in a regularly scheduled protective spray program and use in a rotation program with other fungicides.

Because of its high specific activity, Headline SC has good residual activity against target fungi.

Headline SC is not for use in greenhouse or transplant production.

Mode of Action

Pyraclostrobin, the active ingredient of Headline SC, belongs to the group of respiration inhibitors classified by the US EPA and Canada PMRA as quinone outside inhibitors (QoI) or target site of action Group 11 fungicides.

Resistance Management

Headline SC is effective against pathogens resistant to fungicides with modes of action different from those of QoI fungicides (target site Group 11), such as dicarboximides, sterol inhibitors, benzimidazoles, or phenylamides.

Fungal isolates resistant to Group 11 fungicides, such as pyraclostrobin, azoxystrobin, fluoxastrobin, trifloxystrobin, and kresoxim-methyl, can eventually dominate the fungal population if Group 11 fungicides are used predominantly and repeatedly in the same field in successive years as the primary method of control.
for the targeted pathogen species. This can result in reduction of disease control by Headline SC or other Group 11 fungicides.

DO NOT exceed the maximum seasonal use rate or the total number of Headline SC applications per season and the maximum number of Headline SC applications stated in Restrictions and Limitations - All Crops and Table 2. Headline SC fungicide Crop-specific Requirements. Follow the label instructions for use of Headline SC or other target site of action Group 11 fungicides that have a similar site of action on the same pathogens.

When using a Group 11 fungicide as a solo product, the number of applications should be no more than 1/3 of the total number of fungicide applications per season.

In programs applying or using tank mixes or pre-mixes of a Group 11 fungicide with a fungicide of another group,

the number of Group 11 fungicide (QoI)-containing applications must not be more than 1/2 of the total number of fungicide applications per season. In programs applying or using Group 11 fungicides with both solo products and mixtures, the number of Group 11 fungicide (QoI)-containing applications must not be more than 1/2 of the total number of fungicide applications per season.

In fungicide alternation programs of Group 11 (QoI)-containing fungicides with non-Group 11 fungicides of different modes of action, the maximum number of sequential applications stated in Restrictions and Limitations - All Crops and Table 2. Headline SC fungicide Crop-specific Requirements must be alternated with at least an equal number of applications of a non-Group 11-containing fungicide prior to using the Group 11 (QoI)-containing fungicide again. If two sequential applications of a Group 11 (QoI)-containing fungicide are made, follow this block of applications with 2 or more applications of a non-Group 11-containing fungicide prior to using the Group 11 (QoI)-containing fungicide again.

Resistance Management Advisory

The following instructions may delay the development of fungicide resistance:
1. **Tank mixtures** - Use tank mixtures with effective fungicides from different target site of action groups that are registered/permitted for the same use and that are effective against the pathogens of concern.

   Use at least the minimum labeled rates of each fungicide in the tank mix.

2. **IPM** - Integrate Headline SC into an overall disease and pest management program. Follow cultural practices known to reduce disease development. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. Headline SC can be used in agricultural extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.

3. **Monitoring** - Monitor efficacy of all fungicides used in the disease management program against the targeted pathogen and record other factors that may influence fungicide performance and/or disease development. If a Group 11 target site fungicide, such as Headline SC, appears to be less effective against a pathogen that it previously controlled or suppressed, contact a BASF representative, local extension specialist, or certified crop advisor for further investigation.

**Application Instructions**

Apply Headline SC rates as instructed in Table 2. Cropspecific Requirements. Apply Headline SC with ground sprayer, aerial equipment, or through sprinkler irrigation equipment. Check equipment frequently for calibration.

For containers 5 gallons or less, shake well prior to use. For containers greater than 5 gallons, recirculate prior to use. Consult BASF Representatives for additional information regarding agitation and recirculation.

Under low-level disease conditions, use minimum application rates. For severe or threatening disease conditions, use maximum application rates and shortened spray intervals.

Ground Application Apply Headline SC in sufficient water to ensure thorough coverage of foliage, blooms, and fruit for optimum disease control. Refer to Additives and Tank Mixing Information section for adjuvant or crop oil restrictions for ground applications in corn. See Table 2. Headline SC fungicide Crop-specific
Requirements for infurrow instructions.

Aerial Application

For aerial application in New York State, DO NOT apply within 100 feet of aquatic habitats (such as, but not limited to lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds).

Unless otherwise specified on the label or in supplemental labeling, use no less than 5 gallons of spray solution per acre. For aerial application to citrus orchards, use no less than 10 gallons of spray solution per acre. DO NOT apply when conditions favor drift from target area.

Aerial Application to Alfalfa, Barley, Corn, Oats, Rye, Soybean, Wheat and Triticale

Aerial applications of Headline SC can be made to alfalfa, barley, corn, oats, rye, soybean, wheat and triticale in water volumes of 2 or more gallons of spray solution per acre (gpa). The use of a crop oil or adjuvant can be used to improve spray coverage (see Additives and Tank Mixing Information section). Refer to the adjuvant product label for specific use directions and restrictions.

For optimum results in high disease pressure, use a minimum spray volume of 4 gpa. Select spray nozzles, pumping pressure, and sprayer height to provide medium-to-fine spray droplets that penetrate throughout the crop canopy. Spray calibration must be conducted to confirm spray droplet sizes. Continue to monitor spray application (including weather conditions) to ensure proper droplet size and canopy penetration.

Spray volumes of 5 gallons or more per acre. For applications with spray volumes of 5 gallons or more per acre, an adjuvant can be used to improve spray coverage (see Additives and Tank Mixing Information). Refer to the adjuvant product label for specific use directions and restrictions.

Select spray nozzles, pumping pressure, and sprayer height to provide medium-to-fine spray droplets that penetrate throughout the crop canopy. Calibrate spray to confirm spray droplet sizes. Monitor spray application including weather conditions to ensure proper droplet size and canopy penetration.

Restrictions and Limitations - All Crops
- DO NOT exceed the maximum product rate (fl ozs/A) per year (season), the maximum rate per application, or the total number of applications of Headline SC per year (season) as stated in Table 1. Headline SC fungicide Restrictions and Limitations Overview and Table 2. Headline SC fungicide Crop-specific Requirements. Preharvest interval (PHI) restrictions are also included in these tables.

- DO NOT use Headline SC in greenhouse or transplant production.

- For aerial application in New York State, DO NOT apply within 100 feet of aquatic habitats (such as, but not limited to lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds).

Limitations, Restrictions, and Exceptions

CITRUS FRUIT

Maximum Number of Sequential Foliar Applications: 2

Application Directions: For optimal disease control, begin applications of Headline SC prior to disease development and continue on a 10- to 21-day interval. Use the higher rate when disease pressure is high.

For control of diseases other than greasy spot, integrate 1 to 2 applications of Headline SC early in the spray program.

For greasy spot control, integrate 1 to 2 applications of Headline SC into the fungicide program during the mid-to-late season.

For aerial application to citrus orchards, use no less than 10 gallons of spray solution per acre.

No livestock feeding restrictions.

DO NOT make more than two (2) sequential Headline SC applications before alternating to a labeled fungicide with a different mode of action.

Method

Broadcast/Foliar Air
Broadcast/Foliar Ground
Rates

field_rates_0

- Restricted Entry Interval

12 hours

Timings

Prior to disease development.