

# **CEREALS (WHEAT) - CONTROL OF LEAF DISEASES**

## General Information

### PRODUCT USE INSTRUCTIONS

**Application:** Thorough coverage is necessary to provide good disease control. Make up no more spray solution than is needed for application. Avoid spray overlap, as crop injury may occur.

**Adjuvants:** For some uses on this label, a spreading/penetrating type adjuvant such as a non-ionic surfactant, crop oil concentrate, or blend may be added at the manufacturer's specified rates. Adjuvants that contain some form of silicone can contribute to phytotoxicity. When an adjuvant is used with this product, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification program is recommended.

**Crop Tolerance/Phytotoxicity:** GOLD RUSH DUO demonstrates some phytotoxic effects when mixed with products that are formulated as EC's. These effects are enhanced if applications are made under cool, cloudy conditions and these conditions remain for several days following application. In addition, adjuvants that contain some form of silicone can contribute to phytotoxicity. Under certain environmental conditions, tank mixes of GOLD RUSH DUO plus herbicides and/or fertilizers may cause crop injury in barley, triticale and wheat.

**Efficacy:** Under certain conditions conducive to extended infection periods, use another registered fungicide for additional applications if maximum amount of GOLD RUSH DUO has been used. If resistant isolates to Group 3 or Group 11 fungicides are present, efficacy can be reduced. The higher rates in the rate range and/or shorter spray intervals may be required under conditions of heavy infection pressure, highly susceptible varieties, or when environmental conditions conducive to disease exist.

**Integrated Pest Management:** GOLD RUSH DUO should be integrated into an overall disease and pest management strategy whenever the use of a fungicide is required. Cultural practices known to reduce disease development should be followed. The "Specific Directions for Use section" in this label identifies specific IPM

recommendations for each crop. Consult your local agricultural authorities for additional IPM strategies established for your area. GOLD RUSH DUO may be used in State Agricultural Extension advisory (disease forecasting) programs which recommend application timing based on environmental factors favorable for disease development.

## RESISTANCE MANAGEMENT

GOLD RUSH DUO is a mixture of Group 3 (propiconazole) and Group 11 (azoxystrobin) fungicides. GOLD RUSH DUO has two modes of action: Group 3: DMI (Demethylation Inhibitor) of sterol biosynthesis which disrupts membrane synthesis, and Group 11: inhibitor of the Qo (quinone outside) site within the electron transport system which disrupts fungal respiration. Fungal pathogens can develop resistance to products with the same mode of action when used repeatedly. Because resistance development cannot be predicted, use of this product should conform to resistance management strategies established for the crop and use area. Consult your local or State agricultural authorities for resistance management strategies that are complementary to those in this label. Resistance management strategies may include rotating and/or tank mixing with products having different modes of action or limiting the total number of applications per season. Altitude Crop Innovations, LLC encourages responsible resistance management to ensure effective long-term control of the fungal diseases on this label.

Follow the specific crop recommendations that limit the total number of sprays on a crop and the required alternations with fungicides from other resistance management groups. In situations requiring multiple sprays, develop season-long spray programs for Group 11 (quinone outside inhibiting) fungicides. The program should meet the goal of no more than 1/3 of the total sprays per season, when a Group 11 fungicide is used as a solo product, or 1/2 the total sprays when a Group 11 fungicide is used in a mixture. Programs that include both solo Group 11 products and/or mixes containing Group 11 products should be no more than 1/2 the total sprays.

GOLD RUSH DUO should not be alternated or tank mixed with any fungicide to which resistance has already developed.

See table in the label for Rotational Crops information.

Spray Drift Management: A variety of factors including weather conditions (e.g.,

wind direction, wind speed, temperature, relative humidity) and method of application can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Wind Speed: DO NOT apply at wind speeds greater than 15 mph.

Droplet Size: Apply as a medium or coarser spray (ASAE Standard 572).

Temperature Inversions: If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. DO NOT make applications into areas of temperature inversions or stable atmospheric conditions.”

Other State and Local Requirements: Applicators must follow all state and local pesticide drift requirements regarding application of propiconazole. Where states have more stringent regulations, they must be observed.

Equipment: All application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Additional requirements for aerial applications:

1. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
2. Release spray at the lowest height consistent with efficacy and flight safety. DO NOT release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
3. When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.”

Additional requirement for groundboom application: 1. DO NOT apply with a nozzle height greater than 4 feet above the crop canopy.

**ATTENTION**

GOLD RUSH DUO is extremely phytotoxic to certain apple varieties.

AVOID SPRAY DRIFT. Extreme care must be used to prevent injury to apple trees (and apple fruit).

DO NOT spray GOLD RUSH DUO where spray drift may reach apple trees.

DO NOT spray when conditions favor drift beyond area intended for application. Conditions which may contribute to drift include thermal inversion, wind speed and direction, sprayer nozzle/pressure combinations, spray droplet size, etc. Contact your State extension agent for spray drift prevention guidelines in your area.

DO NOT use spray equipment which has been previously used to apply GOLD RUSH DUO to spray apple trees. Even trace amounts can cause unacceptable phytotoxicity to certain apple and crabapple varieties.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

#### APPLICATION INSTRUCTIONS

Avoid application under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur. DO NOT apply in manner that will result in exposure to humans or animals.

##### Ground Application:

- For field crops (non-trees), apply in a minimum of 10 gallons of water per acre unless specified otherwise.
- For tree crops, apply in a minimum of 50 gallons of water per acre unless specified otherwise.
- Thorough coverage is necessary to provide good disease control.

##### Aerial Application:

- Use only on crops where aerial applications are indicated.
- For field crops (non-trees), apply in a minimum spray volume of 2 gallons per acre unless specified otherwise.
- For ULV applications (corn), apply in a minimum spray volume of 1 gallon per acre. For ULV applications, thorough coverage is necessary to provide good results. Please refer to the Application instructions section for details regarding best practices to achieve good coverage.
- For tree crops, apply in a minimum of 10 gallons of water per acre unless specified otherwise.

- Thorough coverage is necessary to provide good disease control.
- GOLD RUSH DUO is extremely phytotoxic to certain apple varieties.
- AVOID SPRAY DRIFT. Extreme care must be used to prevent injury to apple trees (and apple fruit).
- DO NOT spray GOLD RUSH DUO where spray drift may reach apple trees.

#### Application Through Irrigation Systems (Chemigation):

- Use only on crops for which chemigation is specified on this label.
- Apply this product only through center pivot, solid set, hand move, or moving wheel irrigation systems. DO NOT apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- Apply in 0.1-0.25 inches per acre of water. Excessive water may reduce efficacy.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
- DO NOT connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system, unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Spray Preparation: Chemical tank and injector system should be thoroughly cleaned. Flush system with clean water.

#### Operating Instructions

The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut

down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

DO NOT connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

DO NOT apply when wind speed favors drift beyond the area intended.

#### Center Pivot Irrigation Equipment

Notes: (1) Use only with drive systems which provide uniform water distribution. (2) DO NOT use end guns when chemigating this product through center pivot systems because of non-uniform application.

- Determine the size of the area to be treated.
- Determine the time required to apply 0.125-0.25 inches per acre of water over the entire area to be treated when the system and injection equipment are operated at normal pressures as recommended by the equipment manufacturer. When applying this product through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution. Run the system at 80-95% of the manufacturer's rated capacity.
- Using water, determine the injection pump output when operated at normal line pressure.

- Determine the amount of this product required to treat the area covered by the irrigation system.
- Add the required amount of this product and sufficient water to meet the injection time requirements to the solution tank.
- Make sure the system is fully charged with water before starting injection of the GOLD RUSH DUO solution. Time the injection to last at least as long as it takes to bring the system to full pressure.
- Maintain constant solution tank agitation during the injection period.
- Continue to operate the system until the GOLD RUSH DUO solution has cleared the sprinkler head.

#### Solid Set, Hand Move, and Moving Wheel Irrigation Equipment

- Determine the acreage covered by the sprinklers.
- Fill injector solution tank with water and adjust flow rate to use the contents over a 20-to-30 minute interval. When applying GOLD RUSH DUO through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution.
- Determine the amount of GOLD RUSH DUO required to treat the area covered by the irrigation system.
- Add the required amount of GOLD RUSH DUO into the same quantity of water used to calibrate the injection period.
- Operate the system at the same pressure and time interval established during the calibration.
- Stop injection equipment after treatment is completed. Continue to operate the system until the GOLD RUSH DUO solution has cleared the last sprinkler head.

#### Specific Instructions for Public Water Systems

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back-flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside

diameter of the fill pipe.

3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located at the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

7. DO NOT apply when wind speed favors drift beyond the area intended for treatment.

#### Limitations, Restrictions, and Exceptions

#### Remarks

Protecting the flag leaf is important for maximizing the potential yield. Highest yields are normally obtained when GOLD RUSH DUO is applied when the flag leaf is 50% to fully emerged.

Applications may be made no closer than a 14-day interval.

GOLD RUSH DUO can be applied through full head emergence (Feekes growth stage 10.5). DO NOT apply after this stage to avoid possible illegal residues.

Application: GOLD RUSH DUO is most effective when applied and allowed to dry before a rainfall. For best results, sufficient coverage is very important. Use a higher water volume for aerial application (greater than 2 GPA) if equipment and/or conditions would not provide good coverage. GOLD RUSH DUO may be applied by ground, air, or chemigation.

#### Specific Use Restrictions:

1) DO NOT apply more than 2 applications/A/year.



- 2) DO NOT apply after Feekes 10.54
- 3) DO NOT apply more than 28 fl. oz./A/season of GOLD RUSH DUO.
- 4) DO NOT apply more than 0.167 lb. a.i. of propiconazole - containing products/A/season.
- 5) DO NOT apply more than 0.40 lb. a.i. of azoxystrobin - containing products/A/season.
- 6) Under certain environmental conditions, tank mixes of GOLD RUSH DUO plus herbicides and/or fertilizers may cause crop injury.
- 7) DO NOT apply within 7 days of harvest (7-day PHI) for forage or hay.

#### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

#### Pre-Harvest Interval

7 days

#### Restricted Entry Interval

12 hours

#### Timings

[When the flag leaf is 50% to fully emerged.](#)