



The Chemical Company

Group	3	Fungicide
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SPECIMEN



FUNGICIDE

For use in disease control in the following crops: barley, oats, rye, sugar beets, sugarcane, triticale, and wheat

Active Ingredient\*:

metconazole: 5-[(4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol	8.6%
Other Ingredients:	91.4%
<b>Total:</b>	<u>100.0%</u>

\*Equivalent to 0.75 pound of metconazole per gallon.

EPA Reg. No. 7969-246

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN  
WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions for Use,** and **Conditions of Sale and Warranty.**

**In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).**

Net Contents:

BASF Corporation  
26 Davis Drive, Research Triangle Park, NC 27709

<b>FIRST AID</b>	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes.</li> <li>• Call a poison control center for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• <b>DO NOT</b> induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• <b>DO NOT</b> give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth to mouth, if possible.</li> <li>• Call a poison control center for further treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).</p>	

### **Precautionary Statements**

#### **Hazards to Humans and Domestic Animals**

**WARNING.** Causes substantial but temporary eye injury. **DO NOT** get in eyes or on clothing. Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Harmful if inhaled. Avoid breathing vapor or spray mist.

#### **Personal Protective Equipment (PPE)**

Some materials that are chemically resistant to this product are listed below. For more options, refer to **Category C** on an EPA chemical-resistance category selection chart.

#### **Applicators and other handlers must wear:**

- Protective eyewear
- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, or butyl rubber, or nitrile rubber, or neoprene rubber, or polyvinyl chloride or viton
- Shoes plus socks

Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **Engineering Controls Statement**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### **USER SAFETY RECOMMENDATIONS**

#### **Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### **Environmental Hazards**

This pesticide is toxic to birds, mammals, fish and aquatic invertebrates. Drift or runoff may be hazardous to aquatic organisms in water adjacent to treated areas. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment wash water or rinsate.

**DO NOT** discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. **DO NOT** discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

#### **Groundwater Advisory**

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

## Surface Water Advisory

This product may impact surface water quality through spray and runoff of rain water. This product has a high potential for runoff for several months or more after application. Poorly draining soils or soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features, such as ponds, streams, and springs, will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

## In Case of Spill

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

### Steps to be taken in case material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

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## Directions For Use

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It is a violation of federal law to use this product in a manner inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), restricted entry interval, and notification to workers (as applicable). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. **DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **12 hours**. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Protective eyewear
- Coveralls
- Chemical-resistant gloves, made of any waterproof material (such as nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

### Pesticide Storage

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label. **DO NOT** store below 10° F.

### Pesticide Disposal

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law.

**Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.**

### Container Handling

**Nonrefillable Container. DO NOT reuse or refill this container.** Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Triple rinse containers too large to shake (capacity > 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

(continued)

## STORAGE AND DISPOSAL (continued)

**Refillable Container.** Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

## Endangered Species Concerns

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law. This pesticide is toxic to fish and aquatic invertebrates and must be used strictly in accordance with drift precautions on this label to minimize off-site exposures.

**DO NOT** apply when weather conditions favor drift from treated areas to nontarget aquatic habitats. Notify state and/or federal authorities and BASF immediately if you observe any adverse environmental effects due to use of this product.

## Product Information

This package contains **Caramba® fungicide**. To maximize disease control, apply **Caramba** in a regularly scheduled protective spray program and use in a rotation program with other fungicides.

**Caramba** has good residual activity against target fungi.

**Caramba** is not for use in greenhouse or transplant production.

## Mode of Action

Metconazole, the active ingredient of **Caramba**, inhibits demethylation of sterol biosynthesis (DMI), disrupting cell membrane synthesis of target site of action **Group 3** fungicides.

## Resistance Management

**Caramba**® fungicide contains metconazole, a **Group 3** fungicide, and is effective against pathogens resistant to fungicides with modes of action different from those of QoI fungicides (target site **Group 3**). Fungal isolates resistant to **Group 3** fungicides may eventually dominate the fungal population if **Group 3** 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 may result in reduction of disease control by **Caramba** or other **Group 3** fungicides.

To maintain the performance of **Caramba** in the field, **DO NOT** exceed the maximum seasonal use rate or the total number of applications of **Caramba** per season and the maximum number of applications of **Caramba** stated in **Table 1. Caramba**® fungicide **Crop-specific Restrictions and Limitations**. Adhere to the label instructions regarding the use of **Caramba** or other target site of action **Group 3** fungicides that have a similar site of action on the same pathogens.

### Resistance Management Advisory

The following recommendations may be considered to 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. Integrated Pest Management (IPM) - Caramba** should be integrated into an overall disease and pest management program. Cultural practices known to reduce disease development should be followed. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. **Caramba** may 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 3** target site fungicide, such as **Caramba**, 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.

### Cleaning Spray Equipment

Spraying equipment must be cleaned thoroughly before and after applying this product, particularly if a product with the potential to injure crops was used prior to **Caramba**.

## Directions for Use Through Sprinkler Irrigation Systems

### Sprayer Preparation

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

### Application Instructions

Apply **Caramba** at rates and timings as required in this label.

### Use Directions for Sprinkler Irrigation Applications

- Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side [wheel] roll, traveler, big gun, solid set, or hand move irrigation systems. **DO NOT** apply this product through any other type of irrigation system.
- Add this product to the pesticide supply tank containing sufficient water to maintain a continuous flow by the injection equipment. In continuous moving systems, inject this product-water mixture continuously, applying the labeled rate per acre for that crop. **DO NOT** exceed 1/2 inch (13,577 gallons) per acre. In stationary or noncontinuous moving systems, inject the product-water mixture in the last 15 to 30 minutes of each set, allowing sufficient time for all of the required pesticide to be applied by all the sprinkler heads and applying the labeled rate per acre for that crop. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. Thorough coverage of foliage is required for good control. Good agitation should be maintained during the entire application period.
- If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers or other experts.
- 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 supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
- **DO NOT** connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

#### 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 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.
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.

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### Application Instructions

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Apply **Caramba® fungicide** according to the rate, timing, resistance management and adjuvant use instructions in the disease-specific use directions (**Table 2. Caramba® fungicide Crop-specific Instructions**) in this label.

**Caramba** may be applied by ground sprayer, aerial equipment, or through sprinkler irrigation equipment. Equipment should be checked frequently for calibration.

### Ground Application

Apply **Caramba** in  $\geq 5$  gallons/acre. Thorough coverage of foliage, blooms, and fruit is required for optimum disease control. The use of a nonionic surfactant at the lowest labeled rate may be used to improve spray coverage. Refer to the adjuvant product label for specific use directions. **DO NOT** use adjuvants that contain methylated seed oil, crop oil concentrate, or crop oil with emulsifier properties.

### Aerial Application

**DO NOT** apply when conditions favor drift from target area. **DO NOT** use less than 2 gallons per acre (gpa) spray volume on barley, oats, rye, sugarcane, triticale, and wheat. **DO NOT** use less than 5 gallons per acre spray volume on sugar beets.

For all aerial application volumes (gpa), the use of a nonionic surfactant at the lowest labeled rate may be used to improve spray coverage. Refer to the adjuvant product label for specific use directions. **DO NOT** use adjuvants that contain methylated seed oil, crop oil concentrate, or crop oil with emulsifier properties. 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 assure proper droplet size and canopy penetration.

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### Additives and Tank Mixing Information

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Under some conditions, the use of additives or adjuvants may improve the performance of **Caramba**. However, under some conditions, the use of additives or adjuvants with **Caramba** may cause an adverse crop response. The addition of a nitrogen-based fertilizer may result in some crop leaf burn from the fertilizer. The addition of an emulsifiable concentrate (EC)-based insecticide may result in some crop leaf burn.

**DO NOT** tank mix with products containing a prohibition against tank mixing. Follow the most restrictive labeling requirements of any tank mix product.

**Caramba** can be tank mixed with most labeled fungicides. However, all varieties and cultivars have not been tested with possible tank mix combinations. Local conditions can also influence crop tolerance and may not match those under which BASF has conducted testing. Physical incompatibility, reduced disease control, or crop injury may result from mixing **Caramba** with other products. Therefore, before using any tank mix (fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants and additives), test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

Consult a BASF representative or local agricultural authorities for more information concerning additives.

When an adjuvant is to be used with this product, BASF recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

## Restrictions and Limitations

- **DO NOT** use less than 5 gallons per acre (gpa) spray volume for ground applications.
- For aerial applications, **DO NOT** use less than 2 gallons per acre (gpa) spray volume on barley, oats, rye, sugarcane, triticale and wheat. **DO NOT** use less than 5 gallons per acre spray volume on sugar beets.
- No livestock feeding restrictions for all crops on the label.
- **Rotational Crop Restrictions**  
 30-day plant back interval for leafy vegetables and Brassica leafy vegetables and 120-day plant back interval for all other crops not listed on this label.  
 Crops listed on this label (barley, oats, rye, sugar beets, sugarcane, triticale, and wheat) plus bushberry subgroup 13-07B crops, canola, corn, cotton, peanuts, soybeans, and tuberous and corm vegetables subgroup 1C may be planted immediately following the last application.  
 Dry beans, sorghum, and sunflower may be planted with a plant back interval (PBI) of 0-day.

### Instructions for Directed or Banded Sprays Related to Ground Applications

The application rates shown in the following tables pertain to both aerial and ground (broadcast) methods of application. **Caramba® fungicide** may also be applied as a directed or banded spray over the rows or plant beds with alleys or row middles left unsprayed. For such uses, reduce the labeled **Caramba** rate in proportion to the area actually sprayed. This adjustment is necessary to avoid applying the product at use rates higher than permitted according to the label directions.

Use the following formula to determine the broadcast equivalent rate for applying directed or banded sprays:

$$\frac{\text{sprayed bed width} + \text{unsprayed row middles}}{\text{total row width}}$$

Sprayed Bed Width in Inches	x	Broadcast Rate	=	Band Rate
Total Row Width in Inches		Treated Acres		Field Acre

**EXAMPLE:** A directed spray application will be made to 45" plant beds that are separated by 15" of unsprayed row middles.

$$45" \text{ sprayed bed width} + 15" \text{ unsprayed row middles} = 60" \text{ total row width}$$

The calculations to determine the appropriate equivalent rate of product to use for this situation based on a label broadcast rate of 12 fl oz/acre follows:

45" Sprayed Bed Width	x	12 fl oz <b>Caramba</b>	=	9 fl oz <b>Caramba</b>
60" Total Row Width		Treated Acres		Field Acre

**Table 1. Caramba® fungicide Crop-specific Restrictions and Limitations**

<b>Crop</b>	<b>Minimum Time from Application to Harvest (PHI) (days)</b>	<b>Maximum Product Rate per Application (fl ozs/A)</b>	<b>Maximum Number of Sequential Applications</b>	<b>Maximum Number of Applications per Season</b>	<b>Maximum Product Rate per Season (fl ozs/A)</b>
<b>Barley, Oats, Rye, Triticale and Wheat</b>	30	17	2	2	34
<b>Sugar beets (roots and tops)</b>	14	14	2	2	28
<b>Sugarcane</b>	14	12	2	4	48



**Table 2. Caramba® fungicide Crop-specific Instructions**

<b>Crop</b>	<b>Target Disease</b>	<b>Product Use Rate per Application</b> (fl ozs/A)	<b>Maximum Number of Applications per Season*</b>	<b>Maximum Product Rate per Season**</b> (fl ozs/A)	<b>Minimum Time from Application to Harvest</b> (PHI) (days)
<b>Barley</b> <b>Oats</b> <b>Rye</b> <b>Triticale</b> <b>Wheat</b>	Black point (Kernel blight, Smudge) ( <i>Alternaria</i> spp., <i>Cochliobolus sativus</i> , <i>Helminthosporium</i> spp.) Leaf blotch ( <i>Pyrenophora</i> spp.) Net blotch ( <i>Pyrenophora teres</i> ) Powdery mildew ( <i>Erysiphe graminis</i> ) Rust ( <i>Puccinia</i> spp.) Scald ( <i>Rhynchosporium secalis</i> ) Septoria leaf and glume blotch ( <i>Septoria</i> spp., <i>Stagonospora</i> spp.) Spot blotch ( <i>Cochliobolus sativus</i> ) Tan spot (Yellow leaf spot) ( <i>Pyrenophora trichostoma</i> )	10 to 14	2	34	30
	<b>Suppression Only</b> Head scab ( <i>Fusarium</i> spp.)	13.5 to 17			

**Application Directions (Regular Season Sprays).** For optimal disease control, begin applications of **Caramba** prior to disease development. To maximize yields in cereals, it is important to protect the flag leaf. For diseases other than head scab (*Fusarium head blight*), apply **Caramba** immediately after flag leaf emergence for optimum results.

For optimum suppression of *Fusarium head blight* (head scab), apply **Caramba** at the beginning of anthesis. When head blight is a concern, growers should manage this disease with fungicides that are labeled for and effective in managing this disease, and with cultural practices like crop rotation and plowing to reduce crop residues that serve as an inoculum source.

Rates up to 17 fl ozs/A of **Caramba** may be used under severe disease pressure. The minimum retreatment interval is 6 days after the first application.

No livestock feeding restrictions.

**\*DO NOT** make more than 1 regular season spray when an early season spray is applied to barley, triticale, and wheat.

\*\*The maximum product rate per season is 34 fl ozs/A for all applications (early and/or regular sprays).

**Resistance Management.** To limit the potential for development of resistance, **DO NOT** make more than 2 applications of **Caramba** or other DMI (**Group 3**) fungicides per season.

**See Application Directions for Early Season Disease Control in barley, triticale, and wheat.**

**Application Directions (Early Season Spray)\***

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Applications per Season	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
<b>Barley</b> <b>Triticale</b> <b>Wheat</b>	Leaf blotch <i>(Pyrenophora spp.)</i> Net blotch <i>(Pyrenophora teres)</i> Powdery mildew <i>(Erysiphe graminis)</i> Rust <i>(Puccinia spp.)</i> Scald <i>(Rhynchosporium secalis)</i> Septoria leaf blotch <i>(Septoria spp., Stagonospora spp.)</i> Spot blotch <i>(Cochliobolus sativus)</i> Tan spot (Yellow leaf spot) <i>(Pyrenophora trichostoma)</i>	5.0 to 8.3	1	8.3	30

**Application Directions for Early Season Disease Control.** Apply 5.0 to 8.3 fl ozs/A of **Caramba® fungicide** either in combination with a herbicide application or when conditions favor disease development prior to flag leaf emergence. When the early season application is used, a second **Caramba** application (10 to 14 fl ozs/A) may be required to protect the emerged flag leaf. Environmental conditions and disease pressure at the time of flag leaf emergence are factors to determine the **Caramba** rate for the second application. Early season sprays of **Caramba** will not suppress or control head scab (*Fusarium head blight*).

The minimum retreatment interval (RTI) is 6 days.

No livestock feeding restrictions.

The combination of an early season spray plus a second regular season application after flag leaf emergence must not exceed 34 fl ozs/A per season.

**Crop Tolerance.** Under certain environmental conditions, **Caramba** demonstrates some phytotoxicity when mixed with EC formulated herbicides or insecticides and/or fertilizers. The possibility of phytotoxicity increases if applications are made under cool, cloudy conditions that persist for several days following application. **Caramba** applications with bromoxynil containing products can result in phytotoxicity if applied under cool, wet conditions.

**Specific Use Requirements.** Apply **Caramba** plus herbicide/insecticide tank mixes by air in a minimum of 5 gallons per acre (gpa) total spray volume. If applied by ground, apply a minimum of 10 gpa. Lower gpa applications can increase the risk of phytotoxicity. **DO NOT** use adjuvants that contain methylated seed oil, crop oil concentrate or crop oil with emulsifier properties. **DO NOT** apply **Caramba** if the final spray solution contains fertilizer at a concentration greater than 20% on a v/v basis. **DO NOT** use early season **Caramba** applications in bromoxynil based herbicide tank mixes in barley.

**Tank Mix Recommendations.** For improved disease control, including stripe rust, tank mix 5.0 to 8.3 fl ozs of **Caramba** with 3 to 6 fl ozs of **Headline® fungicide**.

\*Early season disease control is not registered for use in California.

**Table 2. Caramba® fungicide Crop-specific Instructions** (continued)

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Applications per Season	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
<b>Sugar beets (roots and tops)</b>	<i>Powdery mildew (Erysiphe betae)</i>	9 to 14	2	28	14

**Application Directions.** Begin applications prior to disease development. Apply **Caramba** at 14-day intervals. Use the higher rate when disease pressure is high.

**DO NOT** use less than 5 gallons of spray solution per acre (gpa) for aerial applications to sugar beets.

No livestock feeding restrictions.

**Resistance Management.** To limit the potential for development of resistance, **DO NOT** make more than 2 applications of **Caramba** or other DMI (**Group 3**) fungicides per season.

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Applications per Season	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
<b>Sugarcane</b>	Brown rust ( <i>Puccinia melanocephala</i> ) Orange rust ( <i>Puccinia kuehni</i> )	8* or 12	4	48	14

**Application Directions.** For optimal disease control, begin applications of **Caramba** at first sign of disease. If conditions for disease development persist, continue applications on a 14- to 28-day interval. Use the shorter interval when disease pressure is high.

\***Caramba** may only be used at 8 fl ozs/A when being tank-mixed with the labeled rate of a strobilurin (QoI) fungicide.

No livestock feeding restrictions.

**Resistance Management.** To limit the potential for development of resistance, **DO NOT** make more than two (2) sequential applications of **Caramba** or other DMI (**Group 3**) fungicides before alternating to another fungicide with a different mode of action.

## Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

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