



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7504P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

7969-246

Date of Issuance:

APR 17 2008

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

Caramba Fungicide

Name and Address of Registrant (include ZIP Code):

**BASF Corporation**  
**26 Davis Drive, P.O. Box 13528**  
**Research Triangle Park, NC 27709-3528**

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(B) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the following label changes:
  - a. Revise the product registration number to read "EPA Registration Number 7969-246".

Signature of Approving Official:

*Mary L. Waller*

Date:

4/17/2008

Mary L. Waller, Product Manager (21)  
Fungicide Branch, Registration Division (7505P)

- b. Revise the precautionary statements as follows:

“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.”

- c. Add “Protective eyewear” to the Personal Protective Equipment (PPE) section.

- d. Revise the first paragraph of the Environmental Hazards to read as follows:

“This pesticide is toxic to 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 washwater or rinsate.

Ground Water Advisory

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

Surface Water Advisory

This product may contaminate water through drift of spray in wind. 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 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 forecasted within 48 hours.”

- e. Move the Agricultural Use Requirements Box and the Storage and Disposal section so that it follows the first paragraph under the heading “Directions for Use”.
- f. Revise the personal protective equipment in the Agricultural Use Requirements box to include “protective eyewear”.
- g. Remove the sentence “No plantback restrictions.” on page 6, and replace with the following text “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”.
- h. On page 6, delete the bullet regarding the restricted-entry interval as this information is located in the Agricultural Use Requirements box.

- i. On page 6, add the following information to the tank mixing information: "Do not tank mix with products containing a prohibition against tank mixing. Follow the most restrictive labeling requirements of any tank mix product."
  - k. For the small grains, add a minimum retreatment interval of 6-8 days.
3. Submit the following data:
- a. 860.1300 – Nature of Residue in Plants: Additional storage stability information and data required for the wheat metabolism study. Provide the actual dates of initial profiling for the studies to confirm that this step was completed within 6 months of harvest for all samples of grain and straw. Due by December 2008.
  - b. 860.1340 – Residue Analytical Method: (1) Modify the plant method D0508 to incorporate the recommendations of the ILV laboratory in an official enforcement method document reviewed by the petitioner's quality assurance unit and (2) Modify the plant method D0508 to provide the information for a second MS/MS ion transition to provide a confirmation of the analyte identity. If two ion transitions are not available, the Agency recommends that an alternate chromatographic column and/or mobile-phase combination be provided. Due by June 2009.
  - c. 860.1340 – Residue Analytical Method: Submit radiovalidation data in support of data collection method M-41M-1. Due by June 2009.
  - d. 860-1360 – Multiresidue Method: Submit an appropriate FDA multiresidue method testing metconazole. Due by June 2009.
  - f. 860.1380 – Storage Stability: For rotational crop commodities, submit additional storage stability data for *cis*- and *trans*-metconazole reflecting storage up to 18 months for wheat grain and straw, 19 months for lettuce and wheat hay, and 21 months for radish roots and tops and wheat forage. Due by June 2011.
  - g. 860.1480 – Meat, Milk, Poultry, and Eggs: Submit a poultry feeding study conducted at 1x, 3x, and 10x the theoretical dietary burden, and reflecting analysis for metconazole, M1, M12, M31, and the triazole metabolites (1,2,4- triazole, TA, and TAA. Due by December 2009.
  - h. 72-1 – Freshwater fish LC<sub>50</sub> (Both Cold and warm water fish): Due by September 2009.
  - i. 72-2 – Freshwater invertebrate LC<sub>50</sub>: Due by September 2009.
  - j. 72-3(c) – Estuarine/marine invertebrate LC<sub>50</sub>: Due by September 2009.
  - k. 72-4(a) - Fish early life stage (estuarine/marine): Due by September 2009.

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- l. 72-4(b) – Aquatic invertebrate life cycle (freshwater and estuarine/marine): Due by June 2011.
- m. 850.1735 – Whole sediment Acute Toxicity invertebrate (freshwater): Due by June 2009.

4. Submit one copy of the revised final printed label before the product is released for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,



Mary L. Waller  
Product Manager (21)  
Fungicide Branch  
Registration Division (7505P)

Enclosure: Label stamped "Accepted with Comments"  
Acute Toxicity Similarity Review dated August 14, 2007  
Product Chemistry Review dated July 25, 2007



The Chemical Company

Group 3 Fungicide

ACCEPTED  
with COMMENTS  
In EPA Letter Dated:

4/17/2008

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No. 7969-246

# Caramba™

fungicide

For use in disease control in the following crops: barley, oats,  
rye, soybeans, sugar beets, 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%

**Total:** ..... 100.0%

\*Equivalent to 0.75 pound of metconazole per gallon

EPA Reg. No. 7969-xxx

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

**Net Contents:**

BASF Corporation, Agricultural Products  
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>HOT LINE 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 clothing. Wear protective eyewear such as goggles or face shield when handling product. Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. 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:**
- 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, 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 fish and aquatic invertebrates. **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.

**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.

### Directions For Use

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.

#### 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.

To determine whether your county has endangered aquatic species, consult the County Bulletins at <http://www.epa.gov/espp/usa-map.htm>. Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If a bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of endangered aquatic species occur in the area to be treated.

#### 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:

- 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 Disposal

**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 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 2 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 1 complete revolution, for 30 seconds. Stand the container on its 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 2 more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and 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.

**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 2 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 the pesticide product. **DO NOT** reuse the container for any other purpose. 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.

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### General Information

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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** 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/permited 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 Precautions 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 (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.

**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.

**Application Instructions**

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

**Caramba** may be applied by ground sprayer or aerial equipment.

**Ground Application.** Apply **Caramba** in sufficient water to ensure thorough coverage of foliage, blooms, and fruit. Thorough coverage is required for optimum disease control.

**Aerial Application.** Use no less than 5 gallons of spray solution per acre, except as specified in the following paragraph. **DO NOT** apply when conditions favor drift from target area.

Aerial applications of **Caramba may** be made to barley, oats, rye, soybeans, triticale and wheat in water volumes of 2 or more gallons of spray solution per acre (gpa). For application volumes of 2 to <5 gpa, the spray solution must contain crop oil with emulsifier properties at a rate of 0.5 to 1.0 pt/acre. The higher oil rate is recommended when weather conditions become less conducive to spray droplets reaching the target; air temperature is >85° F or relative humidity is <60%; or when application volume is less than or equal to 3 gpa.

For applications of 5 gpa or more, use an approved adjuvant at standard rates (for example, NIS at 1 to 2 pints/100 gallons of spray mix [0.125% to 0.25% volume/volume (v/v)]). 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.

- **DO NOT** use less than 2 gpa spray volume by aerial application.
- Restricted-entry interval is **12 hours**.
- No livestock feeding restrictions for all crops on the label.
- No plantback restrictions.

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**Additives and General  
Tank Mixing Information**

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Under some conditions, the use of additives or adjuvants may improve the performance of **Caramba™ fungicide**. However, under some conditions, the use of additives or adjuvants with **Caramba** may cause crop response.

**Caramba** can be tank mixed with most recommended 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.

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

Crop	Minimum Time from Application to Harvest (PHI) (days)	Maximum Product Rate per Acre per Application (fl ozs)	Maximum Number of Sequential Applications	Maximum Number of Applications per Season	Maximum Product Rate per Acre per Season (fl ozs)
Barley, Oats, Rye, Triticale and Wheat	30	17	2	2	34
Soybeans	30	9.6	2	2	19.2
Sugar beets (roots and tops)	14	17	2	2	34

Aerial application is permitted for all labeled crops.

**Table 2. Caramba™ fungicide Crop-specific Directions For Use**

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Barley Oats Rye Triticale Wheat	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 fl ozs per acre	30 days
	<b>Suppression Only</b> Head scab ( <i>Fusarium</i> spp.)	14 to 17			

**Application Directions.** 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.

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.

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**Table 2. Caramba™ fungicide Crop-specific Directions For Use (continued)**

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Soybeans ( <i>Glycine max</i> )	Asian soybean rust ( <i>Phakopsora pachyrhizi</i> )	8.2 to 9.6	2	19.2 fl ozs per acre	30 days
	Brown spot ( <i>Septoria glycines</i> )				
	Frogeye leaf spot ( <i>Cercospora sojina</i> )				

**Application Directions.** Caramba can be applied from vegetative through full seed (R6 stage) soybeans. For optimal soybean rust control, make initial application of Caramba between early flowering and pod set (R1 and R3 growth stage), or prior to rust development. If environmental conditions favor continued rust development or if monitoring shows active rust symptoms, repeat application 10 to 21 days after the first application. Use the higher rate and shorter interval when rust pressure is high.

For optimal control of other soybean diseases listed above, apply Caramba between full flower and full pod set stage (R2 to R4 growth stage) or prior to disease development.

**DO NOT** use adjuvants (except crop oil) or tank mix with products with high adjuvant load (see **Application Instructions**).

**Management of Asian Soybean Rust**

If Asian soybean rust spores are present in the area, soybeans may be infected even if symptoms are not present. When Asian soybean rust is established (infection level greater than 3% to 5%) on the soybean plant, control is difficult to achieve with a curative approach. Optimum disease control is achieved by utilizing the combination of Caramba and a preventive fungicide like **Headline® fungicide**.

Caramba at 4.5 fl ozs/acre may be tank mixed with a low rate of **Headline**.

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.

**Table 2. Caramba™ fungicide Crop-specific Directions For Use (continued)**

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Sugar beets (roots and tops)	Cercospora leaf spot ( <i>Cercospora beticola</i> )	14 to 17	2	34 fl ozs per acre	14 days
	Powdery mildew ( <i>Erysiphe betae</i> )	9 to 14			

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

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.

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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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