Supplemental Label

Vivando®
Fungicide

For use on fruiting vegetables to control powdery mildew

This supplemental label expires December 31, 2017 and must not be used or distributed after this date.

Active Ingredient*: metrafenone: (3-bromo-6-methoxy-2-methylphenyl)(2,3,4-trimethoxy-6-methylphenyl)methanone ........... 25.20%
Other Ingredients: .............................................................................................................. 74.80%
Total: .............................................................................................................................. 100.00%
*This product contains 2.5 lbs active ingredient per gallon

EPA Reg. No. 7969-284

Directions For Use

- It is a violation of federal law to use this product in a manner inconsistent with its labeling.
- The supplemental labeling and the entire Vivando® fungicide container label, EPA Reg. No. 7969-284, must be in possession of the user at the time of application.
- Read the label affixed to the container for Vivando before applying.
- Use of Vivando according to this labeling is subject to the use precautions and limitations imposed by the label affixed to the container for Vivando.

Application Instructions

Refer to the Vivando® fungicide Crop-specific Requirements table on this label for specific application rates and application intervals for fruiting vegetables. Vivando can be applied with ground sprayer, hand-held sprayer or aerial equipment. DO NOT apply Vivando by chemigation. Refer to the Vivando container label for additional instructions and restrictions.

Aerial Application

Aerial application can be made to fruiting vegetables where applications are not possible using ground equipment. Thorough coverage is required to obtain optimum disease control. Avoid applications under conditions when uniform coverage cannot be obtained or when spray drift may occur. For aerial applications to fruiting vegetables, DO NOT use less than 5 gallons of spray solution per acre. Thorough coverage is required for optimum disease control. The reduced spray volumes used in aerial applications may result in physical incompatibility, reduced disease control, or crop injury from Vivando applications, particularly

Product Information

Mode of Action

Metrafenone, the active ingredient in Vivando, affects several stages in the infection process of the powdery mildew pathogen. It has a different mode of action than that of other fungicides registered for use against fruiting vegetables powdery mildew.

Resistance Management

Vivando contains metrafenone, a fungicide with a mode of action different from that of other fungicides currently registered for use against fruiting vegetables powdery mildew. Refer to the Vivando container label for additional fungicide resistance recommendations.

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26 Davis Drive, Research Triangle Park, NC 27709

We create chemistry
when tank mixed with other products. Therefore, before making aerial applications test the spray on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application.

**Spray Drift Management**

**DO NOT** spray when conditions favor drift beyond area intended for application. Conditions that may contribute to drift include thermal inversion, wind speed and direction, spray nozzle/pressure combinations, spray droplet size, temperature/humidity, etc. Contact your state extension agent for spray drift prevention guidelines in your area. All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers. Avoiding spray drift at the application site is the responsibility of the applicator.

**Aerial Application Methods and Equipment**

The interaction of many equipment-related and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

**DO NOT** apply under circumstances where possible drift to unprotected persons, to food, forage, or other plantings that might be damaged, or crops thereof rendered unfit for sale, use or consumption can occur.

**DO NOT** release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety or special weather conditions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the fixed wingspan or 90% of rotor blade diameter.
2. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they must be observed.

**Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. Use the largest droplet size consistent with acceptable efficacy. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see Wind; Temperature and Humidity; and Temperature Inversions).

**Controlling droplet size:**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - **DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice unless inconsistent with product efficacy. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid-stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Wind**

**DO NOT** apply at wind speeds greater than 15 mph. Drift potential is lowest when wind speed does not exceed 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided when wind speed is below 2 mph due to variable wind direction and high inversion potential. Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity**

Low humidity and high temperatures increase the evaporation of spray droplets and, therefore, the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures. When making applications in low relative humidity, set up equipment to produce larger droplets in order to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light, variable winds common during inversions.
Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas**
The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. bodies of water or non-target crops) is minimal and when wind is blowing away from the sensitive areas.

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### Additives and General Tank Mixing Information

**Vivando** fungicide can be tank mixed with most recommended fungicides, insecticides, liquid fertilizers, biological control products, adjuvants, and additives as specified in the **Vivando** fungicide Crop-specific Requirements table on this label for fruiting vegetables.

Under some conditions, the use of additives or adjuvants may improve the performance of Vivando. However, all varieties and cultivars have not been tested with all 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 Vivando with other products. Therefore, before using any tank mix, 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.

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### Mixing Order

Make sure that each component is thoroughly mixed and suspended before adding tank mix partners. Maintain constant agitation during application. Refer to the **Vivando** fungicide Crop-specific Requirements table on this label for additional details on fruiting vegetables. Refer to the Vivando container label for additional mixing instructions.

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### Restrictions and Limitations

- **DO NOT** exceed the maximum product rate (ft ozs/A) per year, the maximum rate per application, or the total number of applications of Vivando per year as stated in the **Vivando** fungicide Crop-specific Requirements table on this label. Preharvest interval (PHI) restrictions are also included in these tables.
- **Restricted-entry Interval** - **DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.
- **DO NOT** apply by chemigation.
- **Plantback Restrictions** - Crops with registered uses may be replanted at any time. All other crops grown for food or feed may be planted after 365 days.
### Vivando® fungicide Crop-specific Requirements

<table>
<thead>
<tr>
<th>Crop</th>
<th>Target Disease</th>
<th>Product Use Rate per Application (fl ozs/A)</th>
<th>Maximum Number of Applications per Year</th>
<th>Maximum Product Rate per Year (fl ozs/A)</th>
<th>Minimum Time from Application to Harvest (PHI) (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruiting vegetables group</td>
<td>Powdery mildew <em>Leveillula</em> spp., <em>Oidium</em> spp., <em>Erysiphe</em> spp.</td>
<td>15.4 (0.3 lb ai)</td>
<td>3</td>
<td>46.2 (0.9 lb ai)</td>
<td>0</td>
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<td>African eggplant</td>
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<td>Bush tomato</td>
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<td>Bell pepper</td>
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<td>Cocoa</td>
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<td>Current tomato</td>
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<td>Eggplant</td>
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<td>Garden huckleberry</td>
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<td>Goji berry</td>
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<td>Groundcherry</td>
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<td>Martynia</td>
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<td>Naranjilla</td>
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<td>Okra</td>
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<td>Pea eggplant</td>
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<td>Pepino</td>
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<td>Non-bell pepper</td>
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<td>Roselle</td>
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<tr>
<td>Scarlet eggplant</td>
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<td>Sunberry</td>
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<td>Tomatillo</td>
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<td>Tomato</td>
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<td>Tree tomato</td>
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<tr>
<td>Cultivars, varieties, and/or hybrids of these</td>
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</table>

**Application Directions.** For control of powdery mildew, begin Vivando applications prior to disease development using 15.4 fl ozs/A (0.3 lb ai) and continue on a 7 to 14 day interval.

Use the shorter interval when disease pressure is high.

Vivando must be applied before visual symptoms of powdery mildew appear. Vivando has no curative properties and will not control latent or established infections of powdery mildew. If powdery mildew infection is established, Vivando should be applied in a tank mix combination or following application of a curative fungicide.

**DO NOT** apply at rates higher than 15.4 fl ozs product (0.3 lb ai). **DO NOT** apply more than 46.2 fl ozs/A (0.9 lb ai) per year. The minimum interval between sprays is 7 days.

**DO NOT** mix Vivando with horticultural oils when making applications to crops in the fruiting vegetables group.

**Resistance Management.** To limit the potential for development of resistance, **DO NOT** make more than three (3) applications of Vivando per year.

**DO NOT** make more than two (2) sequential Vivando applications before alternating to a labeled 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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**TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.**

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of Sale and Warranty which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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