



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

January 24, 2018

Jordan Moseley  
Regulatory Product Specialist  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, NC 27419

Subject: Label Amendment – Adding New York State restrictions  
Product Name: Mural  
EPA Registration Number: 100-1479  
Application Date: May 17, 2017  
Decision Number: 529757

Dear Mr. Moseley:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

Page 2 of 2  
EPA Reg. No. 100-1479  
Decision No. 529757

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Fatima Sow by phone at (703) 347-8308, or via email at [sow.fatima@epa.gov](mailto:sow.fatima@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to be 'HJ', written in a cursive style.

Hope Johnson, Product Manager 21  
Fungicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure

AZOXYSTROBIN	GROUP	11	FUNGICIDE
BENZOVINDIFLUPYR	GROUP	7	FUNGICIDE

**Mural™**

Fungicide

A broad-spectrum fungicide for prevention and control of listed diseases in ornamental crops grown in greenhouses, shade-houses, lath houses, outdoor nurseries, retail nurseries, commercial landscapes and vegetable plants grown for resale to consumers

Active Ingredients:

Azoxystrobin* .....	30%
Benzovindiflupyr** .....	15%
Other Ingredients:	55%
Total:	100.0%

\*CAS No. 131860-33-8

\*\*CAS No. 1072957-71-1

Mural is a WG formulation that contains 0.30 lb azoxystrobin and 0.15 lb benzovindiflupyr per pound.

**KEEP OUT OF REACH OF CHILDREN.**

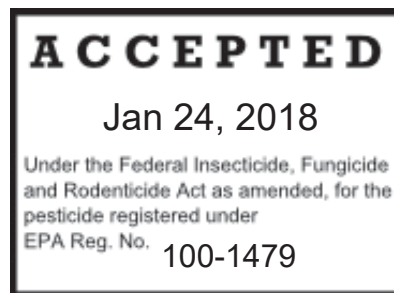
**CAUTION**

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1479

EPA Est.

Net Weight



<b>FIRST AID</b>	
<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>• Do not induce vomiting unless told to by a poison control center or doctor.</li><li>• Do not 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 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</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 by mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>	

---

## **PRECAUTIONARY STATEMENTS**

---

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

#### **CAUTION**

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

## Personal Protective Equipment (PPE)

### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves (barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, neoprene rubber ≥14 mil, natural rubber ≥14 mils, polyethylene, polyvinyl chloride (PVC) ≥14 mils, Viton® ≥14 mils)
- Protective eyewear (goggles, face shield, or safety glasses)

### User Safety Requirements

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

### Engineering Control Statements

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

Benzovindiflupyr and azoxystrobin are toxic to fish and aquatic invertebrates. Benzovindiflupyr is toxic to mammals. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated area.

For terrestrial uses: 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

The active ingredients in this product can be persistent for several months or longer.

### **Ground Water Advisory**

Azoxystrobin has degradation products which have properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

### **Surface Water Advisory**

This product may impact surface water quality due to runoff of rain water or irrigation water. This is especially true for poorly draining soils and soils with shallow ground water. A 15-foot level 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 loading of benzovindiflupyr and azoxystrobin from runoff water and sediment. Do not cultivate within 15 feet of the aquatic areas to allow growth of a vegetative filter strip. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

---

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

---

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. 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 manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## 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.

### 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) and restricted-entry interval. 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:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves (barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mil, natural rubber  $\geq 14$  mils, polyethylene, polyvinyl chloride (PVC)  $\geq 14$  mils, Viton®  $\geq 14$  mils)
- Protective eyewear (goggles, face shield, or safety glasses)

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children and pets out of the treated area until sprays have dried.

**FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL, AND/OR ILLEGAL RESIDUES.**



---

## PRODUCT INFORMATION

---

Mural is a broad-spectrum product containing two fungicides. It has preventative, systemic and curative properties for use for the control of many important ornamental diseases on ornamental crops grown in greenhouses, shade-houses, lath houses, outdoor nurseries, retail nurseries, commercial landscapes, and vegetable plants grown for resale to consumers. Mural may be applied as a foliar spray, directed spray to the stem or base of plant or by drench to containers. Mural may be applied in block, alternating spray or tank-mix programs with other plant protection products. All applications must be made according to the use directions that follow.

### Integrated Pest (Disease) Management

Mural should be integrated into an overall disease management strategy that includes selection of plant varieties with disease tolerance, optimum plant populations, proper fertilization, winter and/or spring pruning, plant debris and management and proper timing and placement of irrigation. Immunoassay detection kits and diagnostic services can assist in the early and accurate identification of causal organisms and corresponding selection of the proper fungicide when required.

### Resistance Management

AZOXYSTROBIN	GROUP	11	FUNGICIDE
BENZOVINDIFLUPYR	GROUP	7	FUNGICIDE

Mural contains two fungicides – azoxystrobin, a strobilurin fungicide in Group 11, and benzovindiflupyr, a succinyl dehydrogenase inhibitor (SDHI) in Group 7. 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. Syngenta encourages responsible resistance management to ensure effective long-term control of the fungal diseases on this label. Mural should not be alternated or tank-mixed with any fungicide to which resistance has already developed.

As part of a resistance management strategy:

- Apply no more than 2 sequential applications unless otherwise stated in the crop section.
- When tank mixing or alternating, use an effective partner – one that provides satisfactory disease control when used alone at the mixture rate.
- Apply early in the crop production cycle to minimize fungal pressure from listed diseases.

## Use Restriction

**DO NOT** apply to tomato plants grown in a greenhouse for the purpose of producing and harvesting fruit.

- The production of tomato plants intended for sale to consumers is an approved use.

---

## MIXING INSTRUCTIONS

---

Mural is a wettable granule (WG) formulation. Prepare no more spray mixture than is required for the immediate operation. Thoroughly clean spray equipment before using this product. Agitate the spray solution before and during the application. Rinse spray tank thoroughly with clean water after each day's use.

### Mural + Tank Mixtures

Mural is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products. If tank mixes are desired, observe all directions, precautions, and limitations on labeling of all products used.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**Physical Compatibility:** To determine the physical compatibility of Mural with other products, use a jar test. Using a quart jar, add the proportionate amounts of the products to 1 qt of water. Add wettable powders and water dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 10 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

**Use of Adjuvants:** The addition of an adjuvant at the recommended use rate may enhance coverage on hard-to-wet plant foliage. Use only adjuvants approved for ornamental plants. Silicone-containing products combined with Mural may cause phytotoxicity. Under certain weather conditions, particularly high temperatures, Mural applied in combination with high rates of silicone-based or oil containing (petroleum or crop) additives or adjuvants may cause injury.

Always test tank mixes, which includes herbicides, fungicides, insecticides adjuvants and fertilizers on a small group of representative plants prior to broad scale use to verify that that the combination is physically compatible, effective and non-injurious under your conditions of use.

### **Preparation of Spray Mixture:**

- Add  $\frac{1}{2}$ - $\frac{2}{3}$  of the required amount of water to the spray or mixing tank.
- With the agitator running, add Mural to the tank.
- If applying with other tank mix products, add those products in the order described in the physical compatibility section above.
- Continue agitation while adding the remainder of the water.
- Begin application of the spray solution after Mural has completely dispersed into the mix water.
- Maintain agitation until all of the mixture has been sprayed.

### **Spray Equipment**

#### **Nozzles**

- Equip sprayers with nozzles that provide accurate and uniform application.
- Nozzles should be the same size and uniformly spaced across the boom.
- Calibrate sprayer before use.
- It is suggested that screens be used to protect the pump and to prevent nozzles from clogging.
- Screens placed on suction side of pump should be *16-mesh or coarser*.
- Do not place a screen in the recirculation line.
- Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles.
- Check nozzle manufacturer's recommendations.

#### **Pump**

- Use a pump with capacity to:
  1. Maintain the recommended psi for the nozzles being used to apply the spray mixture.
  2. Provide sufficient agitation in tank to keep mixture in suspension - this requires recirculation of 10% of tank volume per minute.
- Use a jet agitator or liquid sparge tube for agitation.
- Do not air sparge.

For more information on spray equipment and calibration, consult sprayer manufacturer's and state recommendations. For specific local directions and spray schedules, consult the local or state agricultural authorities for recommendations.

---

## **APPLICATION INSTRUCTIONS**

---

Mural may be applied with all types of spray equipment commonly used for making ground and aerial applications. Proper adjustments and calibration of spraying equipment to give good canopy penetration and coverage is essential for good disease control.

### **Ground Application Restrictions**

**Observe the following restrictions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish ponds.**

- Do not apply within 15 ft of bodies of water such as lakes, reservoirs, rivers, permanent streams, natural ponds, marshes or estuaries.
- Do not cultivate within 15 ft of aquatic areas in order to allow growth of a vegetative filter strip.
- Do not apply when weather conditions favor drift to aquatic areas. Do not apply when gusts or sustained winds exceed 10 mph.
- Do not apply during a temperature inversion. Mist or fog may indicate the presence of an inversion in humid areas.

### **Application through Irrigation Systems (Chemigation)**

- Apply this product only through center pivot, solid set, overhead boom, hand move, moving wheel irrigation systems, ebb and flow and drip or micro irrigation equipment. 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.
- 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.

### **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.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

## **Solid Set, Overhead Boom, Hand Move Irrigation, Ebb and Flood, Drip and Other Micro Irrigation Equipment**

- Determine the area covered by the irrigation equipment.
- Fill injector solution tank with water and adjust flow rate to use the contents over a 20- to 30-minute interval. When applying Mural through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution.
- Determine the amount of Mural required to treat the area covered by the irrigation system.
- Add the required amount of Mural 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 Mural solution has cleared the last sprinkler head or emitter.

## **Aerial Application**

- Aerial application is prohibited in New York State.
- Thorough coverage is necessary to provide good disease control.
- Apply in a minimum of 2 gallons of water per acre unless specified otherwise.
- Avoid application under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.

## **Aerial Spray Restrictions**

**Observe the following restrictions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish ponds.**

- Do not apply by air within 150 ft of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish ponds.
- Release spray at the lowest height consistent with pest control and flight safety. Do not make applications more than 10 feet above the crop canopy.
- Do not apply when weather conditions favor drift to aquatic areas. Do not apply when gusts or sustained winds exceed 10 mph.
- Do not apply during a temperature inversion. Mist or fog may indicate the presence of an inversion in humid areas.

## **Spray Drift Management**

- To avoid spray drift, do not apply when conditions favor drift beyond the target area. The interaction of many equipment- and weather-related factors determines the potential for spray drift. AVOIDING SPRAY DRIFT AT THE

**APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.**

- For aerial applications, mount the spray boom on the aircraft so as to minimize the drift caused by wing tip vortices. Use the minimum practical boom length, which must not exceed 75% of wing span or rotor diameter.
- Use the largest droplet size consistent with good pest control. Formation of very small droplets may be minimized by appropriate nozzle selection, by orientating nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.
- Risk of exposure to aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic area. Avoid spraying during conditions of low humidity and/or high temperatures.

---

**SPECIFIC INSTRUCTIONS FOR PUBLIC WATER SYSTEMS**

---

- 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.
- 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.
- 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 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, or in cases where there is no water pump, 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.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

---

## **SPECIFIC DIRECTIONS FOR USE**

---

### **ORNAMENTALS**

Mural is for control of foliar and root diseases of ornamental plants. Mural may be applied to container, bench, flat, plug, liner, bed or field-grown ornamentals crops in greenhouses, shade-houses, lath houses, outdoor nurseries, retail nurseries and vegetable transplants grown for resale to consumers. Mural may also be applied to ornamental plants in commercial landscapes.

Mural applications should begin prior to disease development and continue throughout the season at listed use rates and specified intervals following resistance management guidelines. Mural works best when used as part of a preventative disease management program.

Apply Mural as a broadcast, banded or directed spray application. Apply foliar applications in sufficient water to ensure complete coverage of the target plant for best control. Repeat applications at specified intervals.

Mural may be applied to control soilborne, seedling, and crown diseases of production ornamentals as a preventative, drench treatment prior to infection. Good coverage of the pre-infection area (root zone, root ball, crown, etc.) is necessary for satisfactory control. Apply drench prior to infection as healthy roots are necessary to optimize product uptake, systemic translocation and disease protection.

For resistance management, do not make more than three sequential drench applications of Mural before alternating with a fungicide of a different mode of action.

Caution should be taken before making application of Mural as a drench to small bedding plants in the seedling/plug stage due to possible phytotoxicity. A limited quantity of plants should be tested prior to full-scale application.

Due to the systemic and upwardly mobile activity of Mural, suppression of certain foliar diseases has been observed in plants treated with drench applications.

Use of Mural as a "rescue" (late curative or eradicator) treatment may not always result in satisfactory disease control.



## Plant Safety

Plant safety has been found to be acceptable for many ornamental crops; however, not all possible plant species and varieties have been tested under all conditions. Injury has been observed on some varieties of African Violets, Rieger Begonia and crabapples. It is recommended to test Mural alone and with any mixtures on a small portion of the crop to ensure that a phytotoxic response will not occur.

**Apples and Cherries:** Mural is extremely phytotoxic to certain apple and cherry varieties. Do not apply to these crops due to phytotoxicity. Do not use spray equipment that has applied Mural for use in these sensitive crops due to possible residue remaining in the sprayer. Do not spray Mural in areas where spray drift may reach apple trees or when conditions favor drift beyond area intended for application.

Do not apply to crops listed in Table 1.

**Table 1: Intolerant Plants**

Do not apply Mural to these plant species or specific varieties

<b>COMMON NAME</b>	<b>BOTANICAL NAME</b>
Apple	<i>Malus domestica</i>
Crabapple - Flame variety	<i>Malus</i> spp.
Crabapple - Brandywine variety	<i>Malus</i> spp.
Crabapple - Novamac variety	<i>Malus</i> spp.
Cherry, Flowering - Yoshina variety	<i>Prunus yedoensis</i> .
Leatherleaf Fern and Other Ferns for cut foliage	<i>Rumohra adianformis</i> and other species for cut foliage
Privet	<i>Ligustrum</i> spp.

**Table 2: Use Rates - Foliar Diseases Controlled**

	Foliar Use Rates and Remarks (oz product per 100 gallons)	Foliar Use Rates and Remarks (oz product per 50 gallons)
<b>1. CONIFER BLIGHTS</b>		
a. Phomopsis Blight ( <i>Phomopsis juniperovora</i> )	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
b. Tip Blight ( <i>Sirococcus strobilinus</i> )	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
c. Lophodermium Needlecast ( <i>L. pinastri</i> )	Apply 7 oz every 7-21 days.	Apply 3.5 oz every 7-21 days.
d. Swiss Needlecast ( <i>Phaeocryptopus guamannii</i> )	Apply 7 oz every 7-21 days.	Apply 3.5 oz every 7-21 days.
<b>2. LEAF BLIGHTS/LEAF SPOTS</b>		
a. Alternaria Leaf Spot ( <i>Alternaria</i> spp.)	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
b. Anthracnose ( <i>Colletotrichum</i> spp., <i>Elsinoe</i> spp.)	Apply 4 to 7 oz every 7-14 days.	Apply 2 to 3.5 oz every 7-14 days.
c. Cylindrocladium leaf spot and stem canker ( <i>Cylindrocladium</i> spp.)	Apply 5 to 7 oz every 7-14 days.	Apply 2 to 3.5 oz every 7-14 days.
d. Downy Mildew (including <i>Peronospora</i> spp., <i>Plasmopara</i> spp., <i>Bremiella</i> spp., <i>Bremia</i> spp.)	Apply 4 to 7 oz every 7-14 days during periods of active plant growth and prior to dormancy or severe infection.	Apply 2 to 3.5 oz every 7-14 days during periods of active plant growth and prior to dormancy or severe infection.
e. Entomosporium Leaf Spot ( <i>Entomosporium</i> spp.)	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
f. Iris Leaf Spot ( <i>Mycosphaerella</i> spp.)	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
g. Leaf spot ( <i>Cladosporium</i> spp., <i>Dreschlera</i> spp., <i>Ascochyta</i> spp., <i>Plectosporium</i> spp., <i>Septoria</i> spp., <i>Stemphyllium</i> spp. and <i>Bipolaris</i> spp.)	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
h. Rose Blackspot ( <i>Diplocarpon rosea</i> )	Apply 7 oz every 7-14 days. Under severe disease conditions or if disease is already present, Mural may be tank mixed with another rose blackspot fungicide.	Apply 3.5 oz every 7-14 days. Under severe disease conditions or if disease is already present, Mural may be tank mixed with another rose blackspot fungicide.
i. Myrothecium leaf spot ( <i>Myrothecium</i> spp.)	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
j. Scab ( <i>Venturia inaequalis</i> , <i>Sphaceloma poinsettiae</i> , <i>Elsinoe australis</i> )	Apply 4 to 7 oz every 7-14 days. Do not apply to apple trees. For crabapples only. Refer to Table 1 for intolerant species.	Apply 2 to 3.5 oz every 7-14 days. Do not apply to apple trees. For crabapples only. Refer to Table 1 for intolerant species.

	<b>Foliar Use Rates and Remarks (oz product per 100 gallons)</b>	<b>Foliar Use Rates and Remarks (oz product per 50 gallons)</b>
k. Marsonina Leaf Spot ( <i>Marsonina</i> spp.)	Apply 4 to 7 oz/100 gal every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
l. Cercospora Leaf Spot ( <i>Cercospora</i> spp., <i>Cercosporidium</i> spp.)	Apply 4 to 7 oz/100 gal every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
m. Corynespora Leafspot <i>Corynespora</i> spp.	Apply 7 oz every 7–21 days.	Apply 3.5 oz every 7-21 days.
<b>3. POWDERY MILDEW</b>		
a. Powdery Mildew (Including <i>Erysiphe</i> spp., <i>Microsphaera</i> spp., <i>Microsphaera azaleae</i> , <i>Sphaerotheca</i> spp., <i>Oidium</i> spp., <i>Podosphaera</i> spp., <i>Uncinula</i> spp.)	Apply 4 to 7 oz every 7-21 days. Do not make more than 2 sequential applications before rotating to another class of fungicide.	Apply 2 to 3.5 oz every 7-21 days. Do not make more than 2 sequential applications before rotating to another class of fungicide.
<b>4. RUSTS</b>		
a. Needle Rust ( <i>Melampsora occidentalis</i> )	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
b. Other rusts (Including <i>Phragmidium</i> spp., <i>Puccinia</i> spp., <i>Gymnosporangium</i> spp., <i>Coleosporium</i> spp., <i>Uromyces</i> spp.)	Apply 4 to 7 oz every 7-21 days.	Apply 2 to 3.5 oz every 7-21 days.
<b>5. FLOWER BLIGHTS</b>		
a. Anthracnose (Including <i>Collectotrichum</i> spp., <i>Elsinoe</i> spp.)	Apply 4 to 7 oz every 7-14 days.	Apply 2 to 3.5 oz every 7-14 days.
b. Blossom Blight ( <i>Monilinia</i> spp.)	Apply 7 oz every 7-14 days. Initiate applications at early bloom and continue through petal fall.	Apply 3.5 oz every 7-14 days. Initiate applications at early bloom and continue through petal fall.
c. Botrytis Blight ( <i>Botrytis cinerea</i> )	Apply 4 to 7 oz every 7-14 days.	Apply 2 to 3.5 oz every 7-14 days.
d. Aschochyta Ray Blight ( <i>Didymella</i> spp.)	Apply 4 to 7 oz every 7-14 days.	Apply 2 to 3.5 oz every 7-14 days.
<b>6. SHOOT/STEM DISEASES</b>		
a. Aerial/Shoot Blight ( <i>Phytophthora</i> spp., <i>Rhizoctonia</i> spp.)	Apply 4 to 7 oz every 7-14 days.	Apply 2 to 3.5 oz every 7-14 days.

**Table 3: Soilborne Diseases Controlled – Directed Spray.**

	Use Rates and Remarks (Ounces of product per 100 gallons)	Use Rates and Remarks (Ounces of product per 50 gallons)
a. <i>Rhizoctonia solani</i>	Apply 5 to 7 oz every 7-21 days.	Apply 2.5 to 3.5 oz every 7-21 days.
b. <i>Sclerotium rolfsii</i>		
c. <i>Fusarium</i> spp.		
d. <i>Sclerotinia</i> spp.		

**Table 4: Soilborne Diseases Controlled – Drench**

See Ornamentals section for additional drench directions.

	Use Rate for Drench Solution (oz product/100 gallons)	Use Rate for Drench Solution (oz product/50 gallons)	Remarks
a. <i>Rhizoctonia solani</i>	2 to 3 oz	1 to 1.5 oz	Apply 1-2 pints of the solution per square foot surface area every 7-28 days.
b. <i>Sclerotium rolfsii</i>			
c. <i>Fusarium</i> spp.			

**Table 5: Foliar and Soil Diseases Suppressed – Drench**

See Ornamentals section for additional drench directions.

	Use Rate for Drench Solution (oz of product/100 gallons)	Use Rate for Drench Solution (oz of product/50 gallons)	Remarks
a. Rusts	2 to 3	1 to 1.5	Apply 1-2 pints of the solution per square foot surface area every 7-28 days.
b. Powdery Mildew			
c. <i>Pythium</i> spp.			
d. <i>Phytophthora</i> spp. (soil borne)	3	1.5	

**Specific Use Restrictions:**

For ornamental crops grown outdoors, do not exceed 9.5 oz/A (1.1 oz/5,000 sq ft; 0.18 lb azoxystrobin/A, 0.09 lb benzovindiflupyr/A) in a single application and 28 oz/A (3.2 oz/5,000 sq ft; 0.52 lb azoxystrobin/A, 0.26 lb benzovindiflupyr/A) per year.

For ornamental crops grown indoors, do not exceed 9.5 oz/A (1.1 oz/5,000 sq ft; 0.18 lb azoxystrobin/A, 0.09 lb benzovindiflupyr/A) in a single application and 28 oz/A (3.2 oz/5,000 sq ft; 0.52 lb azoxystrobin/A, 0.26 lb benzovindiflupyr/A) per year.

## VEGETABLE PLANTS GROWN FOR RESALE TO CONSUMERS

**Table 6: Foliar Diseases Controlled**

Crop	Target Diseases	Use Rate oz product/5,000 sq ft	Remarks
<p><b>Cucurbit Vegetables, Crop Group 9</b></p> <p>See list of cucurbit crops below.</p>	<p>Alternaria Leaf Blight (<i>A. cucumerina</i>)            Alternaria Leaf Spot (<i>A. alternata</i>)            Anthracnose (<i>Colletotrichum orbiculare</i>)            Cercospora Leaf Spot (<i>C. citrullina</i>)            Downy Mildew (<i>Pseudoperonospora cubensis</i>)            Gummy Stem Blight (<i>Didymella bryoniae</i>)            Myrothecium Canker (<i>M. roridum</i>)            Phoma Blight (<i>P. exigua</i>)            Phyllosticta Leaf Spot (<i>P. cucurbitacearum</i>)            Plectosporium Blight (<i>P. tabacinum</i>)            Powdery Mildew (<i>Sphaerotheca fuliginea</i>, <i>Erysiphe cichoracearum</i>)            Septoria Leaf Blight (<i>S. cucurbitacearum</i>)</p>	<p>0.6-0.8</p>	<p>Begin applications prior to disease onset when conditions are conducive for disease. Apply Mural on a 7- to 14-day schedule, making no more than 1 application of a QoI-containing fungicide before alternating to another fungicide with a different mode of action.</p> <p>[Optional language if label has a rate range: If disease pressure is high, use the highest rate.]</p> <p>[Optional language if label has a single rate and interval range: If disease pressure is high, use the shortest interval.]</p> <p>[Optional language if label has a rate range and interval range: If disease pressure is high, use the shortest interval and highest rate.]</p>

**Complete list of Cucurbit Vegetables, Crop Group 9:** Chayote (fruit); Chinese waxgourd (Chinese preserving melon); citron melon; cucumber; gherkin; gourd, edible (hyotan, cucuzza, hechima, Chinese okra); *Momordica* spp. (balsam apple, balsam pear, bittermelon, Chinese cucumber); muskmelon (cantaloupe); pumpkin; squash, summer; squash, winter (butternut squash, calabaza, hubbard squash, acorn squash, spaghetti squash); watermelon

**Application:** For best results, sufficient water volume must be used to provide thorough coverage. Mural can be applied by ground or chemigation. Apply in a minimum of 15 gal/A for ground applications. For chemigation, apply in 0.1-0.25 inches/A of water. Chemigation with excessive water may lead to a decrease in efficacy.

**Specific Use Restrictions:**

- For plants grown indoors, do not make more than 2 applications per crop.
- For plants grown outdoors, do not make more than 2 applications per crop. Where multiple crops are grown in the same area, do not exceed 28 oz/A (3.2 oz/5,000 sq ft; 0.52 lb azoxystrobin/A, 0.26 lb benzovindiflupyr/A) per year.
- May be applied the day of harvest (0-day PHI).

Crop	Target Diseases	Use Rate oz product/5,000 sq ft	Remarks
<p><b>Fruiting Vegetables, Crop Group 8-10 (except Tomatoes):</b></p> <p>See specified fruiting vegetables listed below.</p> <p>See <b>Tomatoes</b> section for specific directions.</p>	<p>Anthracnose (<i>Colletotrichum</i> spp.) Cercospora Leaf Spot (<i>C. capsici</i>) Gray Leaf Spot (<i>Stemphyllium solani</i>) Powdery Mildew (<i>Oidiopsis sicula</i>) Rhizoctonia stem rot (<i>R. solani</i>) <i>Suppression only:</i> Southern blight (<i>Sclerotium rolfsii</i>)</p>	<p>0.6-0.8</p>	<p>Begin applications prior to disease development and continue throughout the season on a 7- to 10-day interval. Make no more than 2 consecutive applications before switching to another effective fungicide with a different mode of action.</p> <p><i>[Optional language if label has a rate range: If disease pressure is high, use the highest rate.]</i></p> <p><i>[Optional language if label has a single rate and interval range: If disease pressure is high, use the shortest interval.]</i></p> <p><i>[Optional language if label has a rate range and interval range: If disease pressure is high, use the shortest interval and highest rate.]</i></p> <p>The addition of a spreading/penetrating type adjuvant may enhance efficacy.</p>

**Fruiting Vegetables, Crop Group 8-10:** eggplant and peppers (bell, non-bell, sweet non-bell)

**Application:** For best results, sufficient water volume must be used to provide thorough coverage. Mural can be applied by ground or aerial application. Apply in a minimum of 15 gal/A for ground applications.

**Specific Use Restrictions:**

- For plants grown indoors, do not make more than 2 applications per crop.
- For plants grown outdoors, do not make more than 2 applications per crop. Where multiple crops are grown in the same area, do not exceed 28 oz/A (3.2 oz/5000 sq ft; 0.52 lb azoxystrobin/A, 0.26 lb benzovindiflupyr/A) per year.
- May be applied the day of harvest (0-day PHI).
- Aerial application is prohibited in New York State.

Crop	Target Diseases	Use Rate oz product/5,000 sq ft	Remarks
Tomatoes Tomatillo	Anthracnose ( <i>Colletotrichum</i> spp.) Black Mold ( <i>A. alternata</i> ) Early Blight ( <i>Alternaria solani</i> ) Gray Leaf Spot ( <i>Stemphylium botryosum</i> ) Leaf Mold ( <i>Fulvia fulva</i> ) Powdery Mildew ( <i>Leveillula taurica</i> ) Septoria Leaf Spot ( <i>S. lycopersici</i> ) Target Spot ( <i>Corynespora cassicola</i> )	0.6	<p>Begin applications prior to disease development and continue throughout the season on a 7- to 10-day interval. Make no more than 2 consecutive applications before switching to another effective fungicide with a different mode of action.</p> <p>[Optional language if label has a single rate and interval range: If disease pressure is high, use the shortest interval.]</p> <p><b>Use of Adjuvants:</b> Under certain weather conditions (particularly high temperatures), Mural in combination with high rates of silicone-based or oil containing (petroleum or crop) additives or adjuvants may cause injury. Do not exceed 0.125% adjuvant (v/v). Consult a Syngenta representative for more information concerning additives or adjuvants.</p> <p>A tank mixture with Dimethoate may cause crop injury.</p> <p>On fresh market tomatoes, do not use adjuvants or tank-mix Mural with any product formulated as an emulsifiable concentrate (EC).</p>

**Application:** For best results, use sufficient water volume to provide thorough coverage. Mural may be applied by ground, chemigation, or aerial application. For chemigation, apply in 0.1-0.25 inches/A of water. Chemigation with excessive water may lead to a decrease in efficacy.

**Specific Use Restrictions:**

- For plants grown indoors for resale to consumers, do not make more than 2 applications per crop.
- For plants grown outdoors, do not make more than 2 applications per crop. Where multiple crops are grown in the same area, do not exceed 28 oz/A (3.2 oz/5000 sq ft; 0.52 lb azoxystrobin/A, 0.26 lb benzovindiflupyr/A) per year.
- Do not apply until 21 days after transplanting or 35 days after seeding.
- Do not apply to tomato plants grown in a greenhouse for the purpose of producing and harvesting fruit.
- May be applied the day of harvest (0-day PHI).
- Aerial application is prohibited in New York State.

**Table 7: Mural Rate Conversion Table**

Oz product/acre	Lb ai azoxystrobin	Lb ai benzovindiflupyr
3.0	0.056	0.028
4.0	0.076	0.038
5.0	0.094	0.047
6.0	0.113	0.056
7.0	0.131	0.066

## **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Store in original container only. Store in a cool, dry and well-ventilated place. Protect from excessive heat. Keep container closed when not in use. Do not store near food or feed.

### **Pesticide Disposal**

Pesticide wastes may be toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal Law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

### **Container Handling [less than or equal to 50 pounds]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  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. 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.

### **Container Handling [bags]**

Non-refillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

### **Container Handling [fiber drums with liners]**

Non-refillable container. Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of liner in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**



Mural™, the ALLIANCE FRAME  
the SYNGENTA Logo and the PURPOSE ICON  
are Trademarks of a Syngenta Group Company.

©20\_\_ Syngenta

For non-emergency (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481.
--

Manufactured for:  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300

Mural 1479 MAS 0316 AMEND-C APRIL2017 – sb – 1/9/2018  
000100-01479.20170428C.Mural-AMEND-0417.PDF