

## **CITRUS - CALIFORNIA AND ARIZONA**

### General Information

#### PRODUCT INFORMATION

Gem 500 SC Fungicide is a broad spectrum fungicide for the control of certain diseases in artichokes, tree nuts, citrus, fruiting vegetables, leafy petiole vegetables, potatoes, rice, root vegetables (except radishes), stone fruit and sugar beets. Gem 500 SC Fungicide works by interfering with respiration in plant pathogenic fungi. Gem 500 SC Fungicide is a potent inhibitor of spore germination and mycelial growth. UNDER CERTAIN CONDITIONS CONDUCIVE TO EXTENDED INFECTION PERIODS, ADDITIONAL FUNGICIDE APPLICATIONS BEYOND THE NUMBER ALLOWED BY THE LABEL MAY BE NEEDED. UNDER THESE CONDITIONS, USE ANOTHER FUNGICIDE REGISTERED FOR THE CROP/DISEASE.

#### Resistance Management

Gem 500 SC Fungicide belongs to the QoI (Group 11) target site of action group and exhibits no known cross-resistance to other chemical classes including sterol inhibitors, dicarboximides, benzimidazoles, anilinopyrimidines, or phenylamides. Trifloxystrobin (the active ingredient in Gem 500 SC Fungicide) exhibits cross-resistance to other Group 11 fungicides such as azoxystrobin and kresoxim-methyl. When products with the same mode of action are used repeatedly, fungal pathogens can develop resistance to those products. Because resistance development cannot be predicted, the use of this product should conform to resistance management strategies established for the crop and use area. Such strategies may include rotation and/or tank mixing with products having different modes of action, or limiting the total number of applications per season.

The North American Fungicide Resistance Action Committee - QoI Working Group (NA-FRAC) recommends: 1) QoI fungicides be used in a preventative manner. 2) When employing tank mixtures for resistance management, use fungicides from different target site Groups that are registered or permitted for the same use, are effective against the pathogen of concern, and are used at not less than the minimum-labeled rates of each fungicide in the tank mix. 3) For resistance management purposes, seed treatment or in-furrow applications utilizing Group 11

fungicides are not counted as foliar applications to determine the maximum number of sequential sprays or the total number of sprays per season.

Follow the specific crop use directions that limit the total number of sprays on a crop and the required alternations with fungicides from other resistance management groups as directed on the label. In situations requiring multiple fungicide sprays, develop season long spray programs for Gem 500 SC Fungicide and other Group 11 fungicides. In a program using a Group 11 fungicide as a solo product, the number of applications should be no more than 1/3 of the total number of fungicide applications per season. In programs in which tank mixes or pre-mixes of a Group 11 fungicide together with a fungicide of another Group are utilized, the number of Group 11 fungicide applications should be no more than 1/2 of the total number of fungicide applications per season. In programs in which applications of Group 11 fungicides are made with both solo products and mixtures, the number of Group 11 fungicide applications should be no more than 1/2 of the total number of fungicide applications per season. Bayer CropScience encourages responsible resistance management to ensure effective long-term control of the fungal diseases on the label.

IPM: Applications of fungicides 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 manufacturer representative for additional IPM strategies established for your area. Gem 500 SC Fungicide may be used in Agricultural Extension advisory (disease forecasting or risk assessment) programs that prescribe application timings based on environmental factors favorable for disease development.

Product performance: Monitor efficacy of all fungicides used in the disease management program against the targeted pathogen by recording factors that may influence fungicide performance and/or disease development. If a fungicide appears to be less effective against a pathogen that it previously controlled or suppressed, contact a manufacturer representative, local extension specialist, or certified crop advisor for further investigation.

## SPRAY EQUIPMENT

Thorough coverage is necessary to provide good disease control. Applications using sufficient water volume to provide thorough and uniform coverage generally

provide the most effective disease control. For ground application equipment, a minimum of 50 gal./A is prescribed for tree crops and 10 gal./A for other crops. For aerial application equipment, a minimum of, 10 gal./A is prescribed for tree crops and 5 gal./A for other crops. Not registered for aerial application in New York State.

### Air Blast Sprayers

Air-assisted or air blast sprayers move spray droplets into the crop canopy using a forced air system. The fan should be set up to deliver only enough air volume to penetrate the canopy and provide good coverage. Adjust deflectors or other aiming devices to direct spray only to the target area. Equip sprayers with nozzles that provide accurate and uniform application. Check whirl plates and nozzle discs for wear and replace as necessary. Calibrate the sprayer before use. Use a pump with a capacity to maintain the correct rated pressure for the nozzles selected. Maintain sufficient agitation to keep the mixture in suspension. Use jet agitators, a liquid sparge tube, or mechanical paddles for agitation. It is suggested that screens be used to prevent nozzles from clogging. Screens placed after the tank and before the nozzles should be 50-mesh or coarser. Check nozzle manufacturer's recommendations.

### Broadcast Ground Sprayers

Equip sprayers with nozzles that provide accurate and uniform application. Be certain that nozzles are the same size and uniformly spaced across the boom. Calibrate the sprayer before use, and replace worn or damaged nozzles.

Use a pump with the capacity to: (1) maintain a minimum of 35 psi at nozzles, and (2) provide sufficient agitation in the tank to keep the mixture in suspension - this requires recirculation of 10% of the tank volume per minute. Use jet agitators or a liquid sparge tube for vigorous agitation. Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh screens at the nozzles. Check nozzle manufacturer's recommendations.

For information on spray equipment and calibration, consult sprayer manufacturer's and/or state recommendations.

For specific local directions and spray schedules, consult the current state agricultural experiment station recommendations.

## Aerial Application

Avoid application under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur. Do not apply directly to humans or animals.

Chemigation: Apply Gem 500 SC Fungicide through irrigation equipment only to crops and diseases for which the chemigation use is specified. Under preventative or light disease pressures the low rate may be applied. Under moderate disease pressures, apply the highest rate allowed and use the shorter spray intervals.

## Limitations, Restrictions, and Exceptions

FOR USE IN CITRUS TO CONTROL SWEET ORANGE SCAB  
FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF CALIFORNIA AND ARIZONA

### Notes:

Use the higher rates and shorter intervals when disease pressure is severe.

### Restrictions:

- Do not make more than two (2) sequential applications of Gem 500 SC Fungicide. Then alternate to at least an equal number of sequential applications of labeled, effective non-QoI fungicides with a different mode of action.

### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

### Pre-Harvest Interval

7 days

### Rates

[field rates 0](#)

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### Restricted Entry Interval

12 hours

### Timings

[Begin applications preventively and continue throughout the growing season using a 7- to 21-day spray schedule.](#)