



# SONATA®

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## Fungicide

Sonata is a foliar fungicide for the reduction of damage caused by powdery mildew on protected crops of strawberry, blackcurrant, white currant, redcurrant, blackberry, raspberry, tomato, pepper and chilli, cucumber, aubergine, lambs lettuce and endive.

## MAPP 19161

A suspension concentrate containing 1016.1 g/L *Bacillus pumilus* strain QST2808 (including fermentation residues and water).  
Containing a minimum of  $1.0 \times 10^9$  cfu/L.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

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Safety Information

## SONATA

Containing 1016.1 g/L *Bacillus pumilus* strain QST2808 (including fermentation residues and water). Containing a minimum of  $1.0 \times 10^9$  cfu/L.

Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

To avoid risks to human health and the environment, comply with the instructions for use.

### IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL FUNGICIDE, as directed below:

Crops	Maximum individual dose	Maximum number of treatments	Latest time of application
<b>Foliar Application:</b>			
Strawberry (Protected – Poly tunnel and Permanent protection with full enclosure)	10 L/Ha	6 per crop	1 day before harvest
Blackcurrant, redcurrant, white currant (Protected – Poly tunnel)	10 L/Ha	6 per crop	1 day before harvest
Blackberry (Protected – Poly tunnel)	10 L/Ha	6 per crop	1 day before harvest
Raspberry (Protected – Poly tunnel)	10 L/Ha	6 per crop	1 day before harvest
Tomato, pepper and chilli, cucumber and aubergine (Protected – Permanent protection with full enclosure)	10 L/Ha	6 per crop	1 day before harvest
Lambs Lettuce (Protected – Poly tunnel)	10 L/Ha	6 per crop	1 day before harvest
Endive (Protected – Poly tunnel and Permanent protection with full enclosure)	10 L/Ha	6 per crop	1 day before harvest

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.**



To access the **Safety Data Sheet** for this product scan the code or use the link below:

[www.cropscience.bayer.co.uk/sonatasds](http://www.cropscience.bayer.co.uk/sonatasds)

or alternatively contact your supplier

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**Bayer**

# SAFETY PRECAUTIONS

## Operator Protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND SUITABLE RESPIRATORY PROTECTIVE EQUIPMENT\* when handling the concentrate or applying the product.

\*Disposable filtering face piece respirator to at least EN149 FFP3 or equivalent.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

## Environmental Protection

DO NOT CONTAMINATE WATER with the product or its container, (do not clean application equipment near surface water).

Avoid contamination via drains from farmyards and roads.

Use appropriate containment to avoid environmental contamination.

This material and its container must be disposed of in a safe way.

The use of this product in recirculating water systems in a glasshouse may result in dilute pesticide waste that requires disposal. All dilute pesticide waste must be disposed of safely and legally to protect humans, wildlife and the environment, especially groundwater and surface water. Pesticide disposal advice is detailed in the 'Code of Practice for Using Plant Protection Products' (Section 5: Disposing of Pesticide Waste).

## Storage and Disposal

KEEP IN ORIGINAL CONTAINER tightly closed in a safe place.

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank, and dispose of safely.

## DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the product label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

Sonata is a biofungicide containing *Bacillus pumilus* strain QST 2808, naturally occurring bacteria that are not genetically modified.

Sonata prevents the germination of fungal spores on plants by forming a physical barrier between the spores and the leaf surface. An amino sugar present in fermentation inhibits cell wall synthesis in fungi and bacteria which leads to destruction of cell integrity and to pathogen cell death. Also, *Bacillus pumilus* QST 2808 may induce systemic acquired resistance (SAR) in plants, resulting in the plants becoming more resistant to a variety of pathogens.

Sonata may be applied as a foliar spray alone or in alternating spray programmes with other registered crop protection products. Alternating with fungicides of different modes of action, along with the use of cultural control methods, is advisable for resistance management.

## Restrictions and Warnings

CONSULT PROCESSOR BEFORE USING ON CROPS FOR PROCESSING.

Micro-organisms may have the potential to provoke sensitising reactions.

## **Diseases Targeted:**

Sonata is a foliar fungicide for the reduction of damage caused by powdery mildew on protected crops of strawberry, blackcurrant, white currant, redcurrant, blackberry, raspberry, tomato, pepper and chilli, cucumber, aubergine, lambs lettuce and endive.

For all crops powdery mildew control usually requires a programme of fungicide sprays and Sonata may be used as part of such a programme. Sonata works preventatively and with a contact mode of action, so for successful control of powdery mildew it is vital to achieve complete foliage cover when spraying.

## **Crop Specific Information:**

### **Strawberry (Protected – Polytunnel and Permanent protection with full enclosure):**

Apply Sonata as foliar spray at a rate of 10 L/ha, from the early onset of disease. Sonata may be used up to a maximum of six applications. A minimum of five days should fall between applications of Sonata.

Apply in a water volume of 200–1000 Litres of water per hectare according to crop density. Apply as a MEDIUM quality spray (BCPC).

### **Raspberry and blackberry (Protected – Polytunnel):**

Apply Sonata as foliar spray at a rate of 10 L/ha, from the early onset of disease. Sonata may be used up to a maximum of six applications. A minimum of five days should fall between applications of Sonata.

Apply in a water volume of 200–1000 Litres of water per hectare according to crop density. Apply as a MEDIUM quality spray (BCPC).

### **Blackcurrant, redcurrant and whitecurrant (Protected – Polytunnel):**

Apply Sonata as foliar spray at a rate of

10 L/ha, from the early onset of disease. Sonata may be used up to a maximum of six applications. A minimum of five days should fall between applications of Sonata.

Apply in a water volume of 200–1000 Litres of water per hectare according to crop density. Apply as a MEDIUM quality spray (BCPC).

### **Tomato, pepper and chilli, aubergine and cucumber (Protected – Permanent protection with full enclosure):**

Apply Sonata as foliar spray at a rate of 10 L/ha, from the early onset of disease. Sonata may be used up to a maximum of six applications. A minimum of five days should fall between applications of Sonata.

Apply in a water volume of 200–1500 Litres of water per hectare according to crop density. Apply as a MEDIUM quality spray (BCPC).

### **Endive (Protected – Polytunnel and Permanent protection with full enclosure):**

Apply Sonata as foliar spray at a rate of 10 L/ha, from the early onset of disease. Sonata may be used up to a maximum of six applications. A minimum of five days should fall between applications of Sonata.

Apply in a water volume of 200–1500 Litres of water per hectare according to crop density. Apply as a MEDIUM quality spray (BCPC).

### **Lambs lettuce (Protected – Polytunnel):**

Apply Sonata as foliar spray at a rate of 10 L/ha, from the early onset of disease. Sonata may be used up to a maximum of six applications. A minimum of five days should fall between applications of Sonata.

Apply in a water volume of 200–1500 Litres of water per hectare according to crop density. Apply as a MEDIUM quality spray (BCPC).

## **Mixing and Spraying**

Before use, ensure that all spray equipment is clean.

Add half the volume of water required, and start agitating.

Agitate product container well and add the required amount of Sonata, continue filling spray tank with the required volume of water.

Keep agitating until spraying completed.

All application equipment must be thoroughly cleaned with water prior to storage or use on another crop.

## **Storage**

Sonata is a biological product and so should be treated with some care. It can be stored at room temperature for two years. Storage at higher temperatures may reduce its shelf-life.

## **Company Advisory Information**

This section is not part of the Product Label under Regulation 1107/2009. It provides additional advice on product use at the discretion of the applicant.

Sonata is a naturally occurring biological control agent suitable for use in organic growing systems. It is approved for use in organic farming under EC Regulation No.834/2007. However, it is advisable to check with your organic certification scheme before use.

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