

IPM Fact Sheet Series**UMass Extension Fruit Team**  
Fact Sheet #SD-003**Strawberry - Botrytis Gray Mold (*Botrytis cinerea*)**

**ID/Disease Cycle:** Fuzzy gray sporulation on rotted fruit and leaf tissue is the classic symptom of Botrytis gray mold. Symptoms also include light brown lesions on fruit, and whole rotted berries that retain their general shape but become tough and dry (mummies).

The fungus may overwinter in mummified fruit, in weeds, or as long-term survival structures called sclerotia; however, it most commonly overwinters in living strawberry tissue and proliferates in the spring as leaves die. Favored by cool, wet weather, the fungus produces wind-borne spores that infect new blossom tissue. In severe cases blossoms and inflorescences may be killed prior to fruit set, but in most cases the pathogen remains latent for some time after infecting the receptacles. Visible signs and symptoms typically occur on ripe or ripening fruit but may also appear at earlier stages. Fruit rot may be especially severe when abundant rainfall occurs between the early bloom and green fruit stages. Secondary infections may occur when spores that cling to ripening fruit germinate in moist packaging conditions after the fruit is harvested, causing uncontrollable storage rots.

**Damage:** The main damage to the crop is from reduced quantity and quality of yield. Significant crop losses can occur in years when wet weather prevails during bloom and ripening periods. Significant post-harvest rot can also occur.



**Figure 1) Left** – *Botrytis cinerea* infection on green fruit; not classic progression from sepals down the side of the fruit resulting from blossom infection [Photo: Ontario IPM], **Right** – *Botrytis cinerea* infection of ripe and ripening fruit [Photo: A. Madeiras, UMass]

**Management:**

**Monitoring:** Consult scouting records from previous years to determine if carry-over inoculum is likely to be present. Scout fields weekly in the current year starting in the pre-bloom period for symptoms. Monitor weather conditions especially during bloom to determine if infection periods are imminent or have occurred.

**Control strategies:***Cultural/Biological:*

- Plant on sites with good air and soil drainage to promote plant health.
- Plant resistant or tolerant cultivars when possible.

- Maintain adequate spacing between plants and rows to allow for good air circulation, drying conditions and spray penetration.
- Avoid excessive nitrogen applications that will stimulate dense canopies and inhibit air circulation and spray penetration.
- Use drip irrigation to avoid the splashing water that results from overhead irrigation.
- Maintain a good in-row mulch cover on the soil to reduce splashing water and contact between fruit and soil.
- The use of low tunnels can also lessen the effect of splashing in the plant canopy.
- Harvest frequently and avoid fruit injury as much as possible.
- Remove all infected plant tissue from the field immediately.
- Refrigerate harvested fruit promptly after harvest to maintain shelf life and quality.
- Conduct seasonal renovation practices, including mowing, to interrupt disease build-up in the field and encourage strong and vigorous plant growth.

*Chemical:*

- See [New England Small Fruit Management Guide](#) for currently recommended spray materials for Botrytis Gray Mold.
- *Botrytis* is especially prone to fungicide resistance development. Rotate fungicide materials from different FRAC groups to avoid promoting the development of resistant strains.
- Apply recommended fungicides starting at 10% bloom, especially if field history or present weather conditions indicate high risk of disease infection.
- Repeat applications during bloom and early fruit set **only** if weather conditions are conducive to disease development.
- Continue applications as fruit ripens **only** if disease is found present in the field and weather conditions are conducive to disease development.

*Organic Chemical Control:*

Several OMRI-approved control products are available, but evidence of their effectiveness is lacking. Growers concerned with fungicide input on their properties should consider growing less susceptible varieties.

- Sulfur and copper compounds are not very effective for gray mold control; in addition, these compounds can cause phytotoxic damage to leaves and fruit.
- Actinovate-AG (*Streptomyces lydicus* WYEC 108s) may provide some level of control and has best efficacy when applied with a spreader/sticker prior to an anticipated infection period.
- *Trichoderma harzianum* products are used as a biocontrol agent in Europe and Israel.
- The [New England Small Fruit Management Guide](#) also lists organic spray materials for Botrytis Gray Mold
- Another good source for current recommendations for organic production is the Cornell Organic Strawberry Production Guide, which can be found at [http://www.nysipm.cornell.edu/organic\\_guide/strawberry.pdf](http://www.nysipm.cornell.edu/organic_guide/strawberry.pdf) .

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**Author(s):** Angela Madeiras and Sonia Schloemann, UMass Extension

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