CT IPM
Integrated Pest Management Program
Department of Plant Science and Landscape Architecture
UConn Extension

Tips on Preventing Botrytis during Cool, Cloudy Weather Periods on Greenhouse Ornamentals

Botrytis blight is one of the most common diseases in the greenhouse. A wide range of plants including **herbaceous ornamentals** and **ornamental bedding plants,** are susceptible. Here are some tips to prevent Botrytis blight during cool, cloudy weather periods during late spring greenhouse production.

- **Keep plants in retail areas clean.** Remove dead and injured plants and spent flowers a couple times a day. Spent flowers are a **food source** for Botrytis Blight!
- Place debris in a **COVERED** garbage can with a **tightly closed lid.**
- Give white flowered varieties plenty of space and place in less humid areas. White flowered varieties always seem to be more prone to Botrytis blight.

Figure 1 & 2: Botrytis sporulation on white flowered petunias and New Guinea Impatiens. Photos by L. Pundt

- **Keep plants on the dry side.** If you absolutely need to water, just spot water areas as needed to prevent over-watering. Water early in the day to make sure foliage is dry during the night. Avoid watering when the water will sit on leaf surfaces for long periods.
- Do not water, unless necessary, as you will spread the spores around. Spot water if needed.
- **Heat and vent to reduce humidity levels** and fungal sporulation.

If you start to see fungal sporulation from Botrytis Blight and physically clean the plants, as you handle the plants, you will just spread the fungal spores.

Figures 2 & 4: Botrytis Ghost Spot on Zonal Geraniums. Photos by L. Pundt

Sometimes, you will see "ghost spots" which are indicative of *Botrytis* lesions whose development has been arrested. As you can see, these young zonal geranium plants were cleaned, which helped spread the spores to the tender young growth.

Tips to Reduce Humidity levels and Condensation in the Greenhouse

- Warm air holds more moisture than cool air. During warm days, the greenhouse air is more humid. As the air cools in the evening, the moisture-holding capacity drops until the dew point is reached. Water then begins to condense on surfaces.
- Reduce humidity by exhausting the moist air and replacing it with cooler, outside air that is drier.

The method and time to heat and vent depends upon the heating and ventilation system in your greenhouses.

- In greenhouses with **vents,** turn the heat on and crack the vents open about one inch. The moist, humid air escapes from the vents.
- In greenhouses with **fans**, activate the exhaust fans for a few minutes and then heat the greenhouse to raise the air temperature. Then, shut off the fans.
- A clock can be set to activate the fans. The cooler, outside air will lower the humidity levels as it is warmed in the greenhouse.
- A relay may be needed to lock out the furnace or boiler until the fan shuts off so that flue gases are not drawn back into the greenhouse. (This will also help to prevent air pollution damage (ethylene or sulfur dioxide) to sensitive seedlings.)
- **Heat and vent two or three times per hour in the evening after the sun goes down and early in the morning at sunrise.**

- Heating and venting can be effective even if it is cool and raining outside.

When you do **not** see the active fungal sporulation, because of heating and venting to reduce favorable environmental conditions, you can then consider fungicide applications. If you spray when you see the Botrytis sporulation, you will just spread the spores around.

When ornamental crops are in flower, extra care is needed to select fungicides to avoid leaving unsightly residues or damage the sensitive flowers**. Always read all labels carefully before applications!**
Consult with the company's technical representative if you have any additional questions.

Some possible late season ornamental fungicides for *Botrytis*

- Affirm WDG (polyoxin D zinc salt) (FRAC 19) has shown excellent flower safety over a large range of plants.

- Astun (isofetamid) (FRAC 7) is reported to be safe on open blooms, with the use of a spreader sticker, according to the company.

- Decree (fenhexamid) (FRAC 17) with a spreader sticker has shown excellent plant safety to blooms, based on past grower experiences. In 2013, resistance to Decree has been reported in the Northeast. To prevent resistance, the label recommends not making make more than two consecutive applications.

- Pageant Intrinsic fungicide (boscalid & pyraclostrobin) (FRAC 7 & 11) has also shown excellent plant safety.

Here are some additional suggestions on additional rotational partners. Thanks to Nancy Rechcigl, Field Technical Manager from Syngenta for her input.

- Mural fungicide (azoxystrobin (FRAC code 11) and benzovindiflupyr (FRAC code 7) provides excellent control of Botrytis on plant foliage, and flowers at low use rates (4-7 oz. /100gal) and has demonstrated good plant safety.

Petunia flowers can be sensitive to sprays and result in some discoloration of the blooms, similar to applications with other strobilurin containing fungicides (FRAC Group 11). For petunia plants, use Mural as a spray or drench early in production (up to 3 weeks prior to shipping) and using Palladium Fungicide at 4-6 oz. /100 gallons as a light spray at the end of production for Botrytis

control. Palladium contains two active ingredients that are excellent against Botrytis. Capsil can also be used with these fungicides to help with spray deposition and minimize any residue.

To help reduce the chance of spray injury:

- Check and or replace your spray nozzles so you are applying an even distribution of fine spray droplets.
- Apply treatments early enough in the day so you do not extend the wetness period into the night.
- If possible, increase air movement by turning on horizontal fans

See the latest edition of New York and New England Management Guidelines for Greenhouse Floriculture and Herbaceous Ornamentals.

For information on fungicides labeled for use on vegetable transplants, see the latest edition of the New England Vegetable Management Guide online at https://nevegetable.org/

See: Some selected fungicides labeled for herb bedding plants on the UConn Greenhouse IPM website under herbs.

By Leanne Pundt, Extension Educator, UConn Extension, 2017, latest revision 2023.

For more information on environmental controls:

Bartok, J. 2013. Reduce Greenhouse Humidity. UConn Fact sheet.

Smith, T. S. and J.W. Bartok, Jr. 2004. Reduce Humidity, Disease in Your Greenhouse. GMPro. November 2004, 52-58.