

BOTHERED WITH HIGH HUMIDITY-BOTYRTIS, MILDEW?

Rather than watch a crop ruined with 'gray mold' (Botyrtis) or powdery mildew, there is something you may do besides dumping the customary number of fungicides on your crop.

1. Realize that Botyrtis, mildew are most troublesome at nighttime high relative humidities.

2. Warm air holds more water vapor than cold air (increasing the temperature of air 20°F doubles the amount of moisture the air may hold). Relative humidity, therefore, is a fraction in terms of percentage that states the amount of water vapor in air compared to the amount it could actually hold at that temperature.

3. Greenhouses are usually quite humid (result of transpiration from plants and evaporation of water from soil, walks, etc.).

4. At the end of the day, as the temperature decreases in the greenhouse; the relative humidity increases.

Recommendation:

a. One hour before sunset, turn your exhaust fans on for one to two minutes (Most systems are designed to give one air exchange per minute). Inlets must be open to allow fresh air to enter from the outside.

b. The newly introduced air is usually cold (late fall, winter, early spring) than existing greenhouse air.

c. Since the new, introduced air is colder, its capacity to hold water is less than the exhausted warm air.

d. Heat systems must be activated to warm this new, introduced air immediately. Very little fuel is required!

e. As a result of bringing new cooler air into the greenhouse and heating to the desired temperature, the relative humidity may be significantly reduced.

Example:

Assume a greenhouse at 4 p.m. in January has an air temperature of 60°F and a relative humidity of 80%. The outside temperature is 35°F and the air is saturated with moisture (100% relative humidity). Evacuate the air in the greenhouse as described previously and introduce the cooler, moist air from outside. Heat the new, cold-moist air to 60°F immediately. The resulting new relative humidity is 40%.

Try it; your plants might like it.