Disease Forecasting Systems

Each foliar disease requires the right combination of temperature and leaf wetness for infection to occur and the disease to spread. Disease forecasting systems predict the likely severity of a disease based on recent weather data. Successful weather-based disease-forecasting systems take the guessing out of fungicide application schedules.

In general, disease-forecasting systems will advise growers to apply fungicides more frequently during wet weather and allow growers to cut back on fungicide applications during drier weather. Two of these systems are briefly described below: MELCAST and TOM-CAST.

MELCAST is a weather-based disease-forecasting system for Alternaria leaf blight, anthracnose and gummy stem blight of cantaloupe and watermelon. The MELCAST system was developed by Rick Latin at Purdue University. Growers can learn more about MELCAST from these Purdue Extension publications: BP-67-W, Foliar Disease Control Using MELCAST and BP-64-W, MELCAST: Melon Disease Forecaster (both available from the Purdue Extension Education Store, www.edustore.purdue.edu).

MELCAST is available for selected sites in some of the states covered by this guide. In season, growers can obtain MELCAST values at MELCAST.info or (800) 939-1604. Interested growers can contact Dan Egel at (812) 886-0198 or egel@purdue.edu.

TOM-CAST, hosted by Cornell University, was originally developed to help manage fungal foliar diseases. More recently, Michigan State University researchers have validated this system for use at with asparagus and carrot.

Slugs and snails prefer moist soils and plenty of organic matter.

To manage purple spot of asparagus and Alternaria and Cercospora foliar blights of carrot, use the TOM-CAST system with 15 disease severity values (DSVs) to schedule sprays instead of a calendar-based program. For best results use a tolerant or resistant cultivar in combination with the TOM-CAST System. TOM-CAST is available for selected sites for some states at newa.cornell.edu/index.php?page=tomato-diseases-tomcast.

For TOM-CAST reports in West-Central Michigan asparagus and carrot fields, contact Ben Werling at (231) 873-2129 or werlingb@msu.edu.

For more information about either system, contact the vegetable disease specialist in your state.

Slug and Snail Control

Occasionally, slugs and snails seriously damage seedlings; tender, low-growing leafy vegetables; or ripening fruit that are on the ground. Slug and snail feeding damage (hollowed-out areas) can be found anywhere on fruit, but is usually concentrated near the stem. Slugs leave behind telltale slime trails (silvery trails) on the surfaces of fruit or leaves. Slugs and snails are active at night or cloudy days.

Slugs and snails favor continuously moist soil and organic mulch. They lay eggs in groups in moist soil, and overwinter in organic mulch. Slugs can complete their entire life cycle in a field.

If slugs are a problem, their hiding places (i.e., boards, stones, weedy areas), should be eliminated. Heavy mulching creates favorable slug habitats, so should be thinned so the soil can become warm and dry. Raised beds that can dry out more readily than flat beds reduce slug problems. Using black plastic mulch discourages slug build-up because it causes the soil to heat up and dry out.

As a last resort, metaldyhyde bait (e.g., Clean Crop, 3.5G® at 30-40 lbs./A or Clean Crop 7.5G® at 15-20 lbs./A) can be used and is usually very effective. Follow label instructions carefully for application methods for each particular vegetable crop. Apply bait in evening after a rain or irrigation. An organic alternative to metaldehyde is iron phosphate. Baits containing iron phosphate are sold under the trade name Sluggo® (and others) and are only slightly less effective than metaldehyde baits.