HOW WE MANAGE TOMATO LATE BLIGHT ON OUR FARM

Anthony Emmi

Emmi & Sons Inc.

1482 West Genesee Road

Baldwinsville, New York 13027

Late Blight disease develops in high moisture conditions and moderate temperatures. The disease spreads rapidly and can be very destructive. For the past several years Late Blight has become a significant threat to our tomato crop. The disease seems to show itself somewhere in New York State every season.

On our farm I am responsible for all decisions to include how we manage diseases. I have one person responsible for our spraying program to include making fungicide decisions, mixing, loading, applications and record keeping. I can assist or fill in at any time and I have one other person who can apply fungicides if needed. Our equipment for applying fungicides consists of an old air blast sprayer, a self-propelled boom sprayer and a smaller three point hitch boom sprayer. Outside of our farm I hire an independent crop consultant/scout to assist us as well as any other outside resources that are needed.

Our goal is to prevent the tomato crop from becoming infected with Late Blight. We do this by being vigilant and prioritizing and using the resources we have available to us.

The first step for us starts at transplant and/or seed purchasing. Know the source of your transplants/seed. Make sure it is a trusted source that always attempts to deliver disease free transplants and/or seeds. We try to use tomato varieties that have proven to be strong plants. These varieties usually come from seed company recommendations and personal experience by trial and elimination over the years. There are now some varieties on the market that show some resistance to late blight.

A strong healthy tomato plant can better fend off diseases than a tomato plant under stress. However, understand that strong healthy tomato plants can also be infected with late blight. We grow our own tomato transplants. We clean and sanitize our greenhouses and try to keep them clean through the growing season. To reduce transplant stress we attempt to evenly water and fertilize tomato plants right through harvest.

Our second step is to think about site selection and cultural practices. Make sure your soil is well maintained. Know your soil. Take soil tests. We take soil tests every two years. The soil should also be well drained. This goes back to growing strong healthy plants that have a better chance at fighting diseases. The planting site should be an open area that dries quickly and receives the most sun possible. We have also considered our row spacing in an attempt to improve drying time. We also grow our tomato plants on black plastic mulch and use sub surface

drip tape to eliminate overhead irrigation. We try to stay out of tomato plantings during wet conditions. We try to only work in tomato plantings when the plants are dry.

Other factors we consider are:

- Sources of inoculum , such as the locations, or possible locations of potato cull piles relative to our farm
- Crop rotation as a general practice
- Weed control to aid in crop drying time and competition for water and nutrients
- General field sanitation such as the cleaning up of cull piles and removal from the farm or destruction (especially if you grow potatoes)
- Sanitation of tools, work clothing, and equipment. (Cultivators etc.)
- Splitting up plantings so you can harvest one planting and spray the other

The third step we take in our management program involves lining up the resources we need to collect information and using that information to make informed decisions in developing our management strategy. We gather information from several resources. Some of these resources we have used over the years and some are newer to us. These are not in any particular order.

- Local Weather forecasts
- On farm weather station data
- NYS IPM Program Network for Environment and Weather Applications (NEWA)
- Private Crop Consultant (set amount of hours per week)
- Crop Scouting Service (contract with specific duties/crops)
- Agricultural Chemical Company Representative
- Cornell Email Late Blight Alerts
- Cornell Late Blight Forecasting DSS
- Cornell Recommends
- USABlight website
- Cornell Internet Resources
- Personal observations
- Employee observations

You don't have to use all the resources you have. Use the information that works for you on your farm. We typically use the Late Blight Alerts from Cornell, weather data from NEWA, independent scout reports, our observations, and an agricultural chemical company representative.

The fourth and final step is to analyze the information and decide on a management strategy. You will either have to spray, change your fungicides, or not spray.

We start our program as early as possible. We scout early and often, especially when weather conditions are favorable for late blight. We start with a copper fungicide. Then we use other contact and systemic fungicides. We rotate classes of fungicides as often as possible to

fight resistance. Sometimes we only have 3 days (late blight present or nearby) and sometimes we have up to 10 days (dry conditions and Late Blight threat is low) to make a decision and act.

This management strategy is only used before there is Late Blight present. If Late Blight did appear on our farm, a different approach would then need to be taken. First, we would have to determine if we have LB by calling Cornell and sending a sample for verification. If LB is present and greater than 10 percent the crop is infected, we would burn down the crop and destroy it. The disease spreads so quickly it is close to impossible to control. If the infection is less than 10 percent we would pull infected plants, bag them and remove them from the farm. We would then carry on our spray program at a shorter interval if we have not done so already.

Our management strategy is not a formal process or meeting. It usually involves a quick meeting to discuss all inputs and then taking action when needed. Timing is critical. This management strategy is the same for all crops we grow. However, because of the quick destructive nature of Late Blight we take a little extra time in managing the disease.

Questions