

## Late Blight US 23 Strain Identified in the Alliston Area

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North Carolina State University (NCSU) identified the US 23 strain of late blight in samples I sent to its lab on July 21.

US 23 is the tomato strain, is highly aggressive on tomatoes (fruit and foliage), and highly aggressive on potato tubers.

A Canadian potato pathologist indicated *that US 23 could be very sneaky; "I have seen situations where virtually no disease was noted in the foliage, but then a storm carried the spores into the field and the spores washed down and affected the tubers. Make sure you're still thinking about late blight and managing it as best you can right up to the very end of the season.*

In recent years US-23 has been reported in most of the U.S. and also in Canada. it is still managed well with late blight specific fungicides such as Orondis, Curzate, Revus to name a few. Copper hydroxide protects the tuber against late blight infection. (Liquid Parasol it is easier to spray than Kocide)

Orondis Gold contains Ridomil. There are isolates of US 23 that are still susceptible to Ridomil. The US 23 strain identified in the Alliston area has shown susceptibility to Ridomil. It should be used only once in a field during the season. Resistance is a concern

### US 23, Alliston area July 17



See Management Practices and more. Extract from Gary Secor talk at Ontario Potato Conference: Pages 2-3 and 4

## **BE AWARE OF:**

- *P. infestans* produces sporangia (spores) in cool wet weather  
A single lesion can produce up to 10,000 spores.  
Move in thunderstorms.
- Require 12 hours of wetness to infect (dew, fog, rain)
- 5-7 days from infection to symptoms and sporulation
- Spores are fragile, killed by hot dry weather and UV.
- Many continued sporulation cycles; reason disease is so explosive
- Spores can fall to soil, cleave into swimming zoospores that swim in soil moisture and infect tubers.
- Eliminate initial inoculum.

Scout fields early and often for late blight

Apply fungicides on a regular basis

Chlorothalonil/mancozeb on a 5-7 day schedule

Add specialty fungicides if late blight appears.

## **PREVENTION**

- Eliminate late blight sources  
Select LB free seed  
Remove infected seed
- Inactivate cull piles; cover with black plastic, bury, chop, freeze
- Destroy volunteers, alternate hosts.  
Provide clean seed to neighbors for garden.
- Crop rotation
- Scout fields for late blight
- Monitor the weather
- Kill hot spots
- Use late blight specific fungicides when late blight is present
- If late blight is found at early emergence spray Curzate on small plants
- Apply at least one fungicide prior to row closure
- Most fungicides are protectants, not eradicants, and must be applied prior to arrival of late blight .
- Use the protectant fungicides chlorothalonil and/or mancozeb as the basic backbone fungicide during the season.
- Then add specialty fungicides as necessary when late blight is present or imminent
- May be able to use Ridomil – one time
- Copper reduces tuber infection.
- Most early blight fungicides do not protect against late blight

## FUNGICIDE APPLICATIONS

- Timing – at least once prior to row closure
- Rate - high label when disease is present – lower rates when no disease
- Interval - 5-10 days; tighter intervals necessary for new growth/ high disease pressure or favorable weather
- Coverage - the better coverage, the better the control; no untreated areas
- Multiple applications “build-up” the fungicide residue; rain and irrigation will distribute throughout the canopy
- Calibrate sprayers for accurate delivery of fungicides
- **Ground Application**
  - Water volume 20-25 gal/a; little advantage to higher volumes
  - Use extended range flat fan or hollow cone nozzle; avoid flood jets
  - Use pressure recommended for nozzle; avoid fogging
  - Ground speed 6-8 mph; faster with new rigs
- **Aerial Application**
  - Use water volume 5 gpa
  - Avoid strips: alternate spray patterns
  - Use ground application to touch up edges or ground obstacles (pivot, power lines, shelterbelts)

## FORECASTING SYSTEMS

- Usually recommend fungicide application when weather conditions are favorable for LB and assume inoculum is present

Charts conditions favorable for late blight when to spray; meant to save sprays

**In a high disease pressure situation, I don't think you should wait for forecasting to begin fungicide application**

- Fungicide program to end of season
- Gavel, Omega, Ranman for tuber blight control

## STORAGE MANAGEMENT

- **Vines DEAD, DEAD, DEAD**
  - Reglone, sulfuric acid, Rely, mechanical
  - Can mix copper with Reglone or spray mechanically killed vines to reduce tuber infection
- Phosphorous acid into storage to reduce tuber late blight.

- Avoid wet harvest conditions
- Avoid bruises and injuries
- Do not store potatoes with > 5% late blight
- Cool and dry potatoes- maximum air volumes
- Late blight and pink rot often occur together