

Late Blight Disease Threat Under Gun At State Potato Growers Meeting

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potatoes unmarketable.

What makes an outbreak particularly dangerous is that it can easily be generated by next-door neighbors who grow tomatoes in gardens. Without constant and frequent fungicide treatment, late blight attacks tomatoes and is spread by air to potato plants. The disease can originate in tomato or potato hosts and can strike either.

Fry showed examples of the effects of late blight at the Cornell University research plots in Ithaca, N.Y. Of the plots shown, late blight was started Aug. 2 last year and by Aug. 19, much of the foliage was gone. "The disease can increase and spread dramatically," said Fry.

The disease can progress from 1 percent of total coverage to total death in a span of 18-28 days.

What is worse is that good growing conditions for potatoes also spell good conditions for the outbreak and spread of late blight.

The fungus was originally brought to the U.S. from central Mexico in the late 1830s and early 1840s, according to Fry. It was the primary cause of the Irish Potato Famine in 1845. It can readily spread by air to neighbor fields.

The mating type of the original fungus was A1, an "asexual" organism that cannot reproduce itself. It needs a living host in order to survive. But more virulent and longer-lasting mating types emerged through the years, such as the A2 mating type.

What concerns researchers, according to Fry, is the emergence of more deadly and longer-lasting types, the A-7 or A-8 strains, which can reproduce and may be extremely difficult to handle. The new types, isolated in 1992, are very aggressive, can infect tomatoes and potatoes readily, and are resistant to commercial fungicides.

In 1994, US-7 isolates were dis-



Dr. William E. Fry, Department of Plant Pathology, Cornell University, told about 150 potato growers that the new isolate could be more fit, more virulent, more aggressive, survive longer, and resist most major fungicides in the long run.

covered in New York, Virginia, Tennessee, South Carolina, and Florida, according to the researcher. US-8 isolates have been discovered in New York, Maine, Pennsylvania, North Carolina, Georgia, Florida, Michigan, Illinois, Oregon, and Washington.

Because of the subsequent soft rot because of blight infection, many potatoes were culled and dumped after harvest. These dumping sites can easily store mating types.

With the new A-7 and A-8 mating types, reproduction is possible. As a result, "oospores" are generated, which can "recombine" traits and make the fungus more durable. Oospores can survive on clothes, equipment, soil, and other places. They can even survive freezing.

The two long-term problems



Even Maine had problems with late blight because of the bad weather conditions last year, according to Leigh Morrow, extension crop specialist, University of Maine.

with the mating types are the fact that they can mutate and that the oospores have "a good survival structure," said Fry. "They can survive a lot of things."

Fry examined some trials with various types of fungicides. The important thing for growers to remember is that they must apply fungicides early and often. Applying a low dosage frequently rather than a high dosage infrequently works best in blight control, according to Fry.

Also, growers need to communicate with each other about the spraying programs, so that both can work together to ensure the blight is under control. Potato growers need to keep an eye out what is happening around them — if a neighbor is growing tomatoes, and the tomato plants aren't being treated for late blight, the risk of outbreak in potatoes is intensified. "There is no silver bullet," said Fry, "for dealing with late blight."



Terry Bourgojn, director of plant industries, Maine Department of Agriculture, spoke about the importance of making sure the fungus does not overwinter in storage.

Management will depend on a variety of factors, especially weather. According to Fry, New York extension believes late blight will be a problem this year.

Conditions need to be humid, warm, and wet for late blight to occur. If the season proves hot and dry, late blight shouldn't be a factor, according to growers.

Growers need to improve scouting, weather monitoring, and more closely inspect the seed source for signs of blight. Work is being conducted at several universities on coming up with blight-resistant cultivars, of which some work proves promising.

At the Wednesday morning annual meeting of the cooperative, Roger Springer, general manager, told those present to "communicate and ask a lot of questions. It's a serious situation that we all need to come to grips with."

Even Maine had problems with



Dr. Donald Daum, Department of Ag Engineering, Penn State, provided information on "getting the whole plant covered" with a spray program.

late blight because of the bad weather conditions last year, according to Leigh Morrow, extension crop specialist, University of Maine. Particularly hard hit was the east and northeast portions of the state, in Aroostook County. Where areas had twice the rainfall, the problem was really serious, according to Morrow. The drier areas of the state were able to keep late blight under control.

The total Maine potato cull crop was 500,000 CWT, and piles were covered and composted. What growers learned through the experience was the importance of controlling the inoculum "and protecting foliage — and that's it," said Morrow.

He told the growers to check the seedlots and "test your seed."

"I don't think we can expect to go to zero tolerance on blight," he said.

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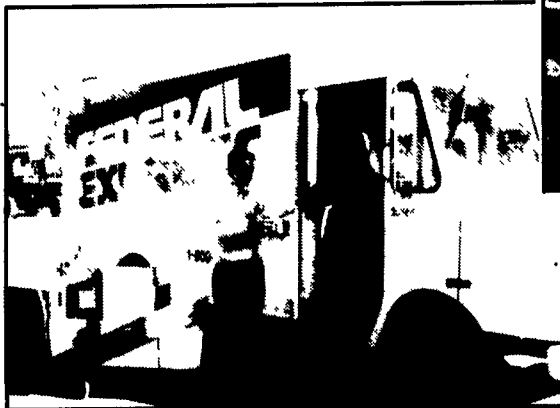
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