

# Protect your investment

## Don't forget the potato seed treatments when planning an IPM program

By Amy Roberts,  
Contributing Editor



If you don't start with clean seed, handle it carefully and use effective late blight seed treatments, you'll probably be behind the eight ball the rest of the season in terms of late blight control.

After years of studies that back their theories, researchers say that using an effective seed treatment is one of the most important steps you can take to start the season ahead of the deadly fungal disease.

Until recently, programs to control sources of primary inoculum for late blight focused on the destruction of cull piles and managing volunteer potatoes. But the programs frequently overlooked seed tubers, except to recommend buying certified seed and inspecting seed fields.

Mary Powelson, an Oregon State University professor of plant pathology, and Debra Inglis, an associate professor with the Washington State University Mt. Vernon Research Extension Unit, first started working together on a project studying seed-borne late blight.

"We really believed that the problem was being introduced into fields on the seed," Powelson says. "If the seed was contaminated with the late blight pathogen, then we should be able to treat and protect the seed."

### Use an effective seed treatment

Powelson credits Dave Lambert, associate professor of plant pathology at the University of Maine, with demonstrating the importance of seed treatment. He showed that when blighted

#### TO HELP PREVENT THE SPREAD OF LATE BLIGHT

- dispose of cull seed piles correctly
- plant clean, disease free potatoes
- treat and handle seed carefully to reduce bruising
- store seed at the right temperature
- warm up properly before cutting
- after cutting, treat to protect from blight and breakdown

### Remove cull piles, treat seed

Lambert says his work began when new late blight



PHOTO BY VICKY BO

To help reach yield potential, start with a seed treatment containing at least one ingredient effective against late blight. And you must use the product before the organism contaminates the seed pieces.

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tubers are precut and allowed to sit, the cut surface can become covered with late blight spores. When workers handle the seed, they spread the spores to healthy seed pieces.

"The single most important practice the grower can do to protect against late blight is to treat the seed with a dressing that has proven activity against the pathogen," Powelson says.

She is quick to point out that not all products provide protection, but those that do work very well.

Powelson and Inglis' research has shown that seed treatment is effective only when growers use a product before the pathogen contaminates the seed pieces. And the product must include one or more active ingredients effective against *Phytophthora infestans*, the organism that causes late blight.

When growers plant seed pieces that are visibly blighted, they will most likely rot and not germinate. But when growers plant contaminated seed, some will germinate and the sprouts will die before emergence. Others will emerge with symptoms of late blight, whereas some will escape the disease entirely.

The blighted sprouts act as a springboard from which the pathogen can spread to surrounding, healthy plants.

strains started showing up in the early 1990s that were worse than previous ones.

"It was a real disaster in our industry," he says.

His field observations suggested that late blight was increasing between seed cutting and emergence. Further studies indicated that blight can build up in untreated cut seed.

"I think it's legitimate to say this is the first year we've been able to prevent the development of late blight in the field by cull pile removal and seed treatment," Lambert says, adding there was some late developing blight problems but the disease was associated with earlier outbreaks in New Brunswick, Canada, across the river.

Powelson and Inglis are also collaborating on observing transmission rates within cultivars, defining environmental conditions that favor the spread of the pathogen and continuing work on seed-borne late blight.

Inglis says studying the efficacy of seed piece fungicide treatments to control tuber-borne late blight helps show what factors can affect the transmission of the fungus from contaminated seed pieces to the sprout.

Dyvon Havens, Washington State University horticulture Extension agent for Skagit County, says, "With late blight being as dominant and potentially as destructive as it is in this climate, the research has probably saved the industry. However, it has not been destructive because this research has provided the IPM (integrated pest management) tools for growers to use at the field level."

Havens says in 1985, only 2,100 acres of potatoes were planted in the county compared to 10,000 this year. She adds the increase in potato acreage has also increased the potential spread of late blight.

### Sharing information between growers, researchers

To help focus growers and researchers on each others' needs, Havens offers grower breakfasts to bring the two groups together.

"It's an opportunity for growers to discuss with the researchers what they are seeing in the fields and voice their needs," she says.

Havens' office also posts emergency notices when late blight is found so growers can take steps to contain the disease spread.

Jerry Nelson, president of Norm Nel-

son Inc., a grower-shipper company in Burlington, Wash., has witnessed various changes in the industry.

"Late blight is a real problem in this area with the type of climate we have," he says. "We're more subject to it in August when we have damp, foggy mornings and warmer afternoons. Growers are very concerned and we need the re-

search done, but one of our biggest problems is losing some of our tools to control late blight and they're not being replaced fast enough." G

*For questions or comments about this story, e-mail Vicky Boyd, The Grower editor, at [vlboyd@worldnet.att.net](mailto:vlboyd@worldnet.att.net) or call (800) 252-1924, ext. 8.*

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