

## Pea diseases elude southern Alta. Researchers

By **Barb Glen**

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*Agriculture Canada research scientist Syama Chatterton said dry conditions this year have not been conducive to growing diseases in her pea disease nursery at Lethbridge. | Barb Glen photo*

No one in the crowd visibly winced when Agriculture Canada research scientist Syama Chatterton explained her team's goal for field pea plots.

"We're trying to get as many diseases as possible."

Inoculating crops with common diseases is necessary to identify lines with resistance. Chatterton told those at a recent Farming Smarter "plot hop" that she and her team are testing various pea lines in their disease nursery for their responses to fusarium root rot, mycosphaerella blight and powdery mildew.

Virtually every line of field pea has resistance to powdery mildew, but new types have to be checked to ensure resistance is intact, said Chatterton.

"That's really the one success story that we have with peas is that we have good resistance to powdery mildew," she said.

Mycosphaerella blight is a different story.

“I’m sure all of you that grow peas are very familiar with mycosphaerella blight,” she said.

“It’s basically going to show up every year on your pea plants. You’re probably spraying for it, usually around canopy closure or early flowering.”

Current pea lines don’t have much resistance to it, but by irrigating plots in the pea disease nursery every day after canopy closure, researchers are encouraging its growth so they can check for any stand-out varieties that resist it.

To encourage fusarium root rot, Chatterton and her team plant peas on peas on peas, “probably the worst practice that you could do as a producer, but it’s the best tool that we have, as plant pathologists, is no crop diversity whatsoever.”

She said mid-June is a good time to start scouting fields for fusarium root rot to see if it will be a problem this season.

A few pea lines show an improvement in resistance to fusarium root rot, though they weren’t specifically bred for that trait and it will be up to the breeder to decide whether to carry it forward for registration.

Two species of fusarium are troublesome for peas: fusarium avenaceum and fusarium soloni, Chatterton said. F. soloni is specific to peas, but avenaceum has a broad host range including peas, lentils and chickpeas and will likely be the subject of further research.

Chatterton has done considerable work on aphanomyces, a mould that affects pea roots. Though now commonly found in pea fields, it has been difficult to establish it in the disease nursery.

“We just cannot get that disease to take. Usually our story as plant pathologists is we get disease when we don’t want it, and when we want it we can’t get it to happen.”

Aphanomyces infection is characterized by honey brown-coloured roots, and it is already appearing in some field trial sites.

“If you’re worried about your peas or you have a history of growing peas and worried you might have aphanomyces, now is actually a really good time to go and dig up some of those roots because early in the season is when we can really distinguish aphanomyces from fusarium,” said Chatterton.

However, early discovery will not lead to treatment because there is none.

“With our root rots, both fusarium and aphanomyces, we tell you to scout for them, and really it’s scouting for them for the next time you’re going to make a decision to plant a pea or a lentil crop,” she said.

“It’s really just knowing what’s in your field and then knowing how you have to maybe manage that field the next time you’re going to choose to plant pea or lentil.”

Avoidance is the only arrow in the quiver against aphanomyces, said Chatterton, so developing resistant lines will be the best tool.

Her research team is also experimenting with spore samplers, which she showed to those on the plot hop. The goal is to collect spores of white mould and sclerotinia, giving an early warning of potential infection.