

CHOCOLATE SPOT IS HERE (AND NOW, SO IS *STEMPHYLIUM*)

This ongoing study of a major faba bean disease also found a similar-looking disease that's currently even more prevalent.



As faba bean acres grow understanding disease management becomes more critical. Chocolate spot is one of the diseases pathologists are focusing on.

When the pea root rot causal agent *Aphanomyces* was first discovered in Alberta, growers and researchers were caught flat-footed. *Aphanomyces* seemed to come from nowhere and the pressure was on to chart its spread and mount a defence.

Preventing this kind of ambush from occurring in faba beans has been a mission for Dr. Syama Chatterton, Plant Pathologist with Agriculture and Agri-Food Canada in Lethbridge.

"Faba beans are still kind of a new crop on the Prairies," Chatterton said, "so there's a little bit of uncertainty about what its major disease problems might be, especially if we see acreage start to increase."

The most obvious candidate is chocolate spot. This disease occurs everywhere faba beans are grown, more or less worldwide. With funding from APG and others, Chatterton mapped the incidence of this disease over a five-year period to 2017. That year, fresh four-year funding allowed her to continue working on chocolate spot, with 2020 being the project's fourth and final growing season.

"Over the past three growing seasons, we've put faba beans outside, then brought them back inside to see what disease levels occur and when," Chatterton said. "We're trying to match the weather patterns that occur with how disease actually develops. We're getting a

pretty clear understanding of some of the weather variables that contribute to chocolate spot."

A new threat emerges: *Stemphylium*

In 2019, Chatterton's investigations in Alberta (around Lethbridge and Lacombe) confirmed that chocolate spot is no longer just someone else's problem. This disease was found in roughly 30% of faba bean crops surveyed. Surprisingly, the faba bean disease *Stemphylium* was found in 40% to 50% of fields.

"Part of the challenge is that the different foliar lesions on faba beans are very difficult to tell apart," Chatterton said. "We went in thinking most of the lesions we're seeing are chocolate spot or Botrytis. But as we started pulling them out and doing isolations, we found that many were in fact *Stemphylium*."

Making firm connections between weather patterns and the development of chocolate spot or *Stemphylium* in faba bean is a first for Alberta. This should help growers be prepared when, not if, chocolate spot becomes a bigger factor. Knowing more about *Stemphylium* will help give growers a better defence against this lookalike faba bean disease.

Since 2017, Chatterton and her team have filled out the picture on chocolate spot in faba beans. The weather through the past three growing seasons was even cooperative, providing a mix of hot/dry and cool/wet conditions for fieldwork.

"We now have some fantastic data that could be used to put together a risk-forecasting or decision-support system for faba bean disease," Chatterton said. "Research is also successful when it generates new questions, such as what we saw with *Stemphylium*. I'm happy with the progress we've made, helping to prepare for what growers might be facing in the future."