

## **AGR2106: Fungicide Insensitivity in *Colletotrichum lentis*, the Causal Agent of Anthracnose of Lentil**

Anthracnose, a disease caused by the fungus *Colletotrichum lentis*, can reduce lentil yield when severe. Management of Anthracnose relies heavily on fungicides, the majority of which contain a strobilurin fungicide as an active ingredient (classified as FRAC Group 11). Fungi can become insensitive to strobilurins relatively easily through a single mutation, leading to reduced effectiveness. Insensitivity to strobilurins has been reported in Anthracnose in lentil in Saskatchewan. However, prior to this project, the extent of this insensitivity was not known. This project fills that gap by determining how common this insensitivity is, how fungicide application affects insensitivity and assessing if sensitive isolates are more aggressive than insensitive isolates. It also aims to explore insensitivity to non-strobilurin fungicides.

A molecular assay was developed to assess isolates for insensitivity. Surveys of commercial lentil fields were conducted in 2020 and 2021. Insensitivity to strobilurin fungicides was common throughout the lentil production area in Saskatchewan. The incidence of insensitivity differed from location to location within a single field in many fields. Sites within fields with insensitive fungal isolates had less severe disease than sites with sensitive fungi. Although not in the original proposal, factors that may influence disease were explored in field surveys. Incidence varied by crop district in 2020. There was very little disease observed in 2021 because of drought. More research is needed into the relative growth and ability to cause disease of insensitive and sensitive isolates, the impact of fungicide application on insensitivity, and insensitivity to non-strobilurin fungicide groups.