

Sclerotinia stem rot causes significant yield loss for canola in western Canada each year; however, the degree to which this disease affects individual fields varies dramatically depending on specific environmental and weather conditions. Foliar fungicides have proven to be the most consistent and effective method of controlling sclerotinia stem rot in canola. While throughout much of the Prairies, annual fungicide applications to canola are unlikely to be economical over the long-term, the benefits can be substantial with proper timing and sufficiently high disease pressure. While variation in the susceptibility of individual cultivars has been documented, commercial cultivars that are considered tolerant to sclerotinia stem rot are a relatively recent technology. It is important to note that sclerotinia tolerant canola hybrids can still be affected by the pathogen responsible for this disease; however, the expectation is that tolerant hybrids will exhibit fewer symptoms and reduced yield loss relative to susceptible hybrids under the same conditions.

Trials were run at three locations in Saskatchewan and two in Manitoba in 2013, 2014, and 2015 to evaluate the relative effectiveness of genetic tolerance and foliar fungicides to reduce sclerotinia stem rot infection in canola and to assess where foliar fungicide applications may still be required when growing a hybrid with genetic tolerance to sclerotinia.

Overall, this study showed that sclerotinia incidence and severity were reduced by either using tolerant hybrid or fungicide applications; however, overall disease pressure was low and neither technology eliminated the disease when it was present at notable levels. Under the low disease pressure encountered, there was little benefit to applying fungicide for tolerant hybrid as there were no further reductions in disease and effects on yield were generally not significant or likely to be economical. Early infection generally has the greatest potential to result in yield loss; therefore, it is generally advisable to apply a fungicide between 20-50% bloom and before a significant number of petals have dropped.

Not surprisingly given the low levels of disease, there were no benefits to dual fungicide applications with regard to either visual symptoms or actual seed yields.

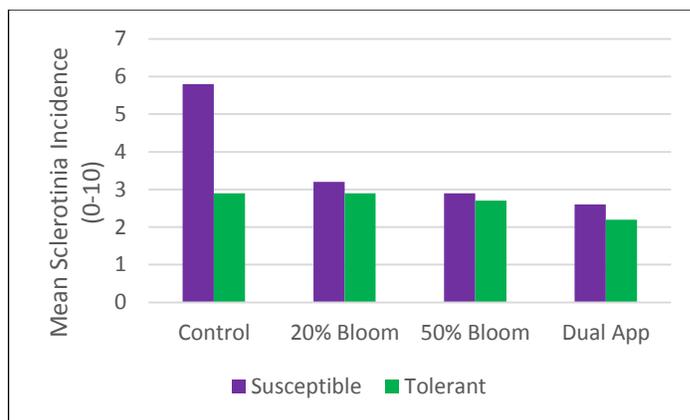


Figure 1: Effect of fungicide and genetic tolerance on sclerotinia incidence across sites.

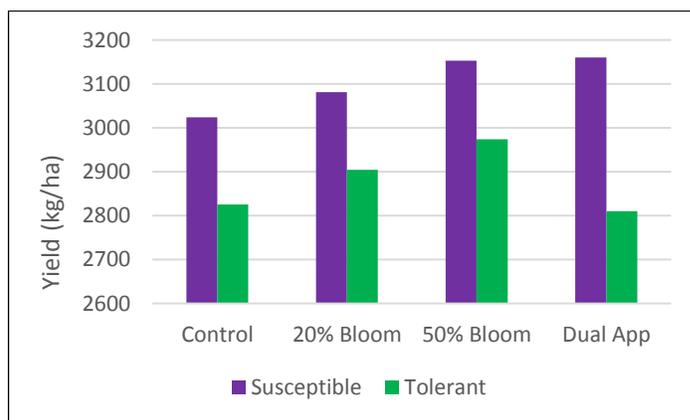


Figure 2: Effect of fungicide and genetic tolerance on canola yield across sites.

Results showed that tolerant hybrids are effective for reducing disease and less likely to benefit from fungicide; however, susceptible hybrids may frequently yield higher, at least under low disease pressure as encountered in these trials

Financial support for this research was provided by the Saskatchewan Canola Development Commission. In-kind support for the project was provided by DuPont-Pioneer and BASF.