

2011 Field Pea and Dry Bean Research at the Brandon Research Centre

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The 2011 dry bean and field pea disease survey activities funded by MPGA were conducted as outlined in the Pulse Science Cluster program. All field activities of these studies were completed despite the excessively wet conditions that occurred during May and June of this field season. The 2011 laboratory work on pathogen identification is ongoing, but some preliminary results are available.

Root rot pathogens of field pea in Manitoba

Root rot is a major disease of field pea in Manitoba and is capable of causing significant yield reductions due to compromised root systems and reduced plant stands. Cultivars with complete resistance have yet to become available and control of root rot is difficult. Previous studies indicated that the most prevalent causal agents for root rot in field pea in Manitoba were *Fusarium solani* and *Rhizoctonia solani*. However, recent findings also indicate the presence of *F. avenaceum* in root rot affected field peas in Manitoba and North Dakota. These reports suggest that the pathogen population may be changing over time, and emphasize the need to obtain up-to-date information on the pathogen species involved. To screen for host resistance and design effective control measures, it is critical to determine the prevalence of root rot pathogens of pea.

The third year of a 4-year study approved by MPGA was initiated in 2011 to survey crops of field pea for root diseases. The inclement weather and flooding in southwest Manitoba, where field pea is most commonly grown, resulted in the seeded field pea area in the province being reduced significantly. The survey of 24 pea crops for root diseases was conducted from early to late July when most plants were at the late vegetative to early bloom stage. Ten plants were sampled at each of three random sites for each crop surveyed. The thirty pea plants were rated for severity of root rot using a disease severity scale of 0 (no disease) to 9 (death of plant). Root rot symptoms were observed in every field, as in 2010, but average disease severity was higher in 2011. Excessive soil moisture early in the season and flooding favoured pea root rot development. Fifteen symptomatic roots were collected per field for isolation of root rot pathogens in the laboratory. *Fusarium* spp. were more frequently isolated from diseased roots than were *Rhizoctonia* spp. Pathogenicity tests of the predominant isolates of *Fusarium* will be conducted using a susceptible pea cultivar during the winter/spring of 2011-2012 in order to confirm the capability of the pathogen(s) to cause disease.



Conditions such as excess moisture affect root growth and can increase damage from root rot pathogens such as *Fusarium* spp.

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