

Pyramiding novel genes for resistance to Ascochyta blight from Pisum fulvum into field pea through molecular breeding

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SPG Contributions	Project Status	Duration/Timeline of Project (Year to Year)	Total Project Cost
\$355,091.00	Completed	May 2008 – April 2013	\$355,091.00

Project Description

To initiate a long-term strategy for the enhancement and maintenance of resistance in pea for Ascochyta blight and powdery mildew using an integrated genetic improvement approach through interspecific hybridization, tissue culture techniques to accelerate hybrid development, plant pathology, and molecular genetics.

Outcome

Based on greenhouse and field experiments, four wild accessions namely, were identified with substantially greater resistance than check cultivars. Two interspecific crosses were found to be most promising among the four wide crosses made. A linkage map consisting of Single Nucleotide Polymorphisms (SNP) markers will be used to identify quantitative trait loci (QTLs) for mycosphaerella blight and other traits. Germplasm derived from introgression of improved Ascochyta blight resistance from the wild pea accessions will serve as a resource to pea breeders attempting to increase durability of resistance and increase yield potential.

Research Objective

OBJECTIVE 1

To initiate a long-term strategy for the enhancement and maintenance of resistance in pea for Ascochyta blight and powdery mildew using an integrated genetic improvement approach through interspecific hybridization, tissue culture techniques to accelerate hybrid development, plant pathology, and molecular genetics.