The Summer Undergraduate Research Fellowship (SURF) Symposium
24 July 2015
Purdue University, West Lafayette, Indiana, USA

Detecting Genomic Regions Responsible for Resistance in Arabidopsis

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ABSTRACT

Ralstonia solanacearum is a soil-borne root colonizing pathogen causing bacterial wilt that leads to the loss of many agricultural commodity crops, such as tomato, banana, and pepper, as well as many others. In this study, we look at the plant-pathogen interaction between *Ralstonia solanacearum* and various ecotypes of *Arabidopsis thaliana* in hopes of finding resistant ecotypes. To identify resistant ecotypes, seeds are first sterilized and left to soak in the dark. Then the seeds are plated on MS media, transferred to a growth chamber, and allowed to grow for 5 days. On day 5, plates are removed from the growth chamber, and plants are transferred to new plates that have been inoculated with *R. solanacearum* and the root tips are marked. After 5 days, the inoculated plates are scanned and root length measured. The vegetative growth is also removed and placed in 95% ethanol for chlorophyll analyses. Based on root growth and chlorophyll analyses xx ecotypes showed increased resistance to the *R. solanacearum* in comparison to 24 ecotypes. Identifying resistant ecotypes will allow genetic analysis of why these plants are more resistant to *Ralstonia solanacearum*, in search of genes that have homologs in important agricultural commodity crops that can confer resistance.

KEYWORDS

Arabidopsis, Arabidopsis thaliana, Ralstonia, Ralstonia solanacearum, plant pathogens, bacterial wilt