



Feng Qu

Project Title

Virus Induced Gene Silencing

Biography

Feng Qu is an Associate Professor of the Department of Plant Pathology, The Ohio State University. He received his Ph.D. from Chinese Academy of Sciences. Before joining OSU in 2008, he was a research faculty at University of Nebraska for many years. His primary research interest lies in the molecular mechanisms of all forms of defense responses in plants that target virus pathogens. His current research focus includes RNA silencing-based plant defense targeting plant viruses and applying virus-induced gene silencing (VIGS) as a tool to investigate soybean genes involved in resistances to other microbial pathogens and insect pests. Specifically his ongoing efforts on using VIGS to elucidate candidate resistance genes that confer resistance to the soybean root rot pathogen as well as soybean aphid. He is also actively involved in a number of collaborative projects that use VIGS as a tool for functional genomics in soybean and other crop plants. Dr. Qu's lab has published over 20 research papers during the last five years.



Project Description

Feng Qu has two main projects he is conducted funded by Ohio Soybean Council. Project 1.) Characterizing soybean disease resistance genes using Virus-Induced Gene Silencing (VIGS). This project focuses on developing and optimizing a new VIGS vector based on bean pod mottle virus, and use the improved vector (named VAL) to interrogate the candidate soybean genes identified by Dr. Anne Dorrance's lab for their potential functions. These soybean genes have been identified in Dr. Dorrance's lab as possible candidates that confer resistance to soybean root rot pathogen and other fungal pathogens. At this point, while continuing efforts to further optimize the VAL vector, the lab is simultaneously examining 9 of the candidate genes in greenhouse settings. Project 2.) Monitoring, research and management of invasive soybean insect pests. This project is led by Dr. Andy Michel, an Entomologist at OARDC. In collaboration with Drs. Michel and Rouf Mian, the focus within this project is to elucidate the function of a number of soybean genes that were identified as possible candidates of anti-aphid resistance gene Rag5. VIGS constructs have been made targeting seven of these candidate genes. These constructs will be tested soon to determine which of the genes is the true Rag5 gene.

