

## A soybean NON-RACE SPECIFIC DISEASE RESISTANCE 1(NDR1) Gene Functions during a Resistance Response to the Parasitic Nematode *Heteroderaglycines*

Sudha Acharya<sup>1</sup> and Vincent P and Klink<sup>1, 2, 3</sup>

<sup>1</sup>Mississippi State University, USA

<sup>2</sup>Entomology and Plant Pathology, Mississippi State University, USA

<sup>3</sup>Center for Computational Sciences High Performance Computing Collaborator, Mississippi State University, USA

A soybean homolog of the *Arabidopsis thaliana* NON-RACE SPECIFIC DISEASE RESISTANCE 1 (NDR1) coiled-coil nucleotide binding leucine rich repeat (CC-NB-LRR) defense signaling gene (Gm-NDR1-1) has been identified. The gene has been observed to be expressed in root cells undergoing a defense response to the root pathogenic nematode, *Heterodera glycines*. The result indicates that the soybean NDR1 may be important in the defense response to *H. glycines*. Soybean has 4 closely related NDR1 paralogs referred to as NDR1-1 to NDR1-4. Additional experiments show that overexpression of the soybean NDR1-1, suppresses parasitism while RNA interference increases parasitism. Additional experiments will be presented showing related functions that NDR1-1 has during the defense response that soybean has to *H. glycines* infection.

### Biography:

Sudha Acharya is from Nepal. She had completed undergraduate from Agriculture and Forestry University, Rampur, Chitwan. Currently, she is a master's student in Department of Biology in Mississippi State University, United States. Her research mainly focuses on identification of genes that function in defense response to soybean cyst nematodes. She has been performing molecular level works to continue this project. She is very enthusiastic, passionate, hard-working, and friendly person dreaming to pursue Ph.D soon to acquire in depth knowledge on plant molecular biology. She has an experience of teaching, lab works, leadership and also participated in many webinars.