

LSU AgCenter – Plant Pathology and Crop Physiology (Nematology)

April- December, 2023 Long-Term Research Opportunity

Supervisor/Mentor:

Dr. Tristan Watson (Assistant Professor)

Profile: <https://lsuagcenter.com/profiles/TWatson>

Job Description:

The intern will focus on evaluating integrated pest management strategies for plant-parasitic nematodes on cotton in Louisiana. The study will involve conducting field trials in two locations (Winnsboro and St. Joseph, Louisiana) to evaluate the impact of cotton host resistance and in-furrow applied nematicides on reniform nematode (*Rotylenchulus reniformis*) populations. The experimental design will be multifactorial and will include evaluation of various cotton cultivars and nematicide chemistries in small-plot field trials conducted from April 2023 to November 2023. Complimentary greenhouse trials with nematode-infested field soil will also be conducted. The intern will learn how to conduct small-plot field studies, greenhouse pot experiments, nematology laboratory techniques, data analysis, and write scientific reports/manuscripts.

Specific Activities:

1. Conduct two field trials to evaluate new resistant cotton cultivars and nematicides for suppression of reniform nematode
 - Establish field experiments
 - Collect soil samples from research plots throughout the season
 - Nematode extraction from soil samples using elutriation and sucrose-centrifugation
 - Quantification of nematodes from soil samples using light microscopy
 - Measure plant growth and collect yield data
 - Write a final report

2. Conduct complimentary greenhouse trials to evaluate new resistant cotton cultivars and nematicides for suppression of reniform nematode on cotton
 - Prepare and maintain nematode cultures in a greenhouse for subsequent plant inoculation
 - Set-up of greenhouse experiments to evaluate nematicides and plant resistance
 - Analysis of nematode population development and crop damage (i.e., root galling, egg quantification, etc.)
 - Write a final report

Responsibilities/Roles:

Students will be responsible for conducting experiments related to the Specific Activities 1-2 under the supervision of Dr. Tristan Watson and with the support of a Research Associate (technician) and graduate students.

Contact Information:

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