

# Plant Pathology Seminar Series

## “From the field to the lab and back: translational strategies to improve disease control in vegetable crops”

Dr. Lina Quesada-Associate Professor and Vegetable Pathologist at  
NC State University



The obligate oomycete *Pseudoperonospora cubensis* causes cucurbit downy mildew (CDM) on a broad range of Cucurbitaceae host plants. The fungal hemibiotroph pathogen *Ceratocystis fimbriata* causes black rot on sweet potato. Both pathogens re-emerged in the 2000s resulting in a higher reliance on fungicide applications by growers in the United States, which has prompted research to unravel causes for these epidemics and develop new methods to manage disease. Population analyses revealed that *P. cubensis* is subdivided into two distinct clades with host specialization and differential response to certain fungicides. Using this information and comparative genomics approaches we developed a bio-surveillance system for CDM that relies on spore traps and provides information about inoculum level, crop risk, and fungicide resistance for precision disease management within a growing season.

Epidemiological studies with *C. fimbriata* have revealed that previous recommendations on seed production, crop rotation, and vector management are no longer effective. New efforts are also trying to integrate bio-surveillance systems into sweet potato production. Our findings not only provide insight into the causes of these two epidemics but significantly improve disease management by shifting current practices to updated recommendations for growers that account for pathogen biology.

11:00 am | September 28th, 2020 | Plant Pathology 515, Fall 2020

Zoom Link and ID: <https://wsu.zoom.us/j/91621814000?pwd=MDVOY1prS0QybDRaMXNvTVNxTS82UT09>

Meeting ID: 916 2181 4000

Passcode: 5353

Call in number: 1 253 215 8782



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**SHORT BIO:** Dr. Lina Quesada was born in Bogota, Colombia. She obtained B. Sc. degrees in Microbiology and Biology at Universidad de Los Andes in 2005 and a Ph.D. in Plant Pathology from Michigan State University (MSU) in 2010. Following a NIFA Postdoctoral Fellowship at MSU, she was appointed an Assistant Professor in the Department of Plant Pathology at North Carolina State University in 2013 and received early tenure and promotion to Associate Professor in 2018. Dr. Quesada is an extension plant pathologist that integrates genomics and molecular plant pathology into a research and extension program that addresses grower needs. She is focused on understanding how application of disease management strategies such as host resistance or fungicides, impact pathogen populations and how that information can be used to improve pathogen detection and control. Her research has been critical in improving cucurbit downy mildew management and halting epidemics of sweetpotato black rot, earning her the respect of stakeholders and fellow scientists.

Name pronounced: Lena Kesada

Websites and social media:

Lab website: <https://go.ncsu.edu/veggiepathology>

Twitter: <https://twitter.com/QuesadaLabNCSU>

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