

Geminivirus Resistance in Mustard Plants

Adam Hales, Laureana Lazarte, Yu-Ya Liang

Department of Biology, Utah Valley University, Orem, UT 84058

Background

Plant viruses pose a significant threat to the agriculture industry worldwide, infecting commonly grown mustard plants such as broccoli, cabbage, and cauliflower (all members of the *Brassica* genus)

This particular geminivirus has been problematic for Utah agriculture. The purpose of this project is to expose a variety of *Brassica* species to a novel DNA virus, plants that show signs of disease resistance after being infected with the virus will be identified. Following infection, genetic information from all *Brassica* species will be obtained and then analyzed to identify possible sources that promote disease resistance.

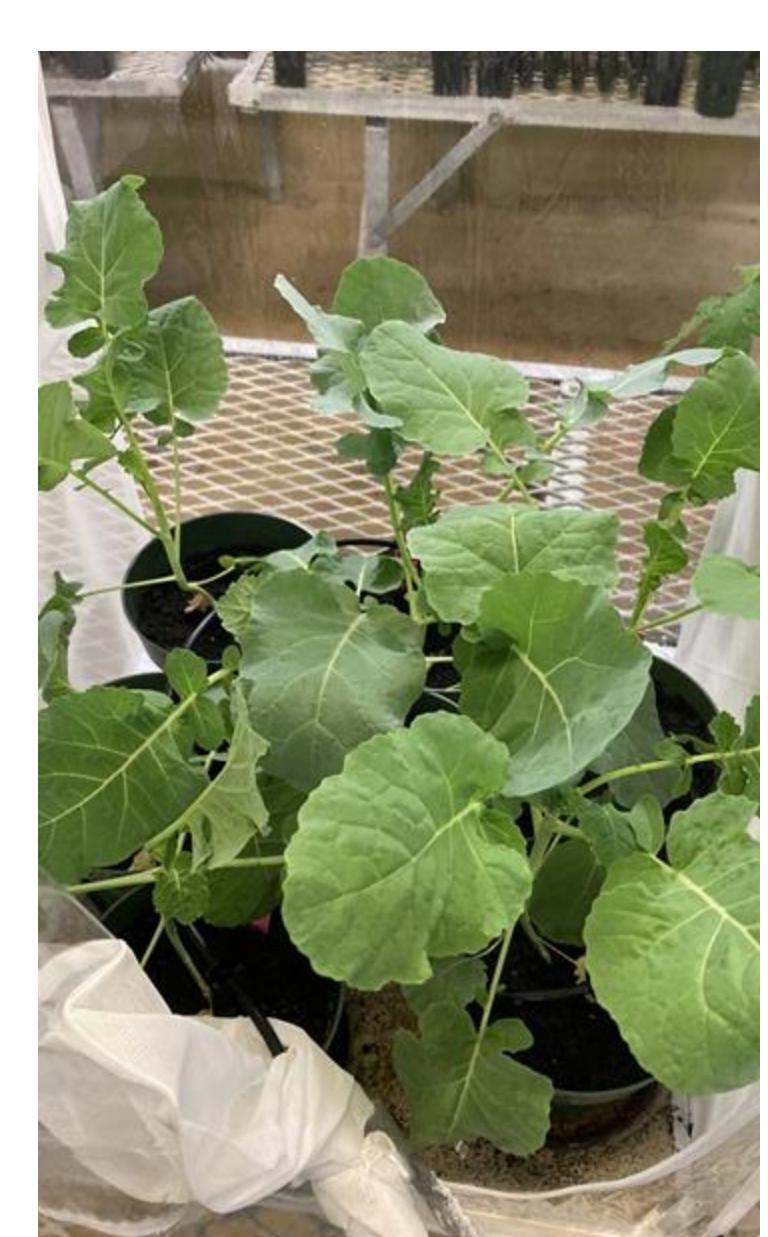
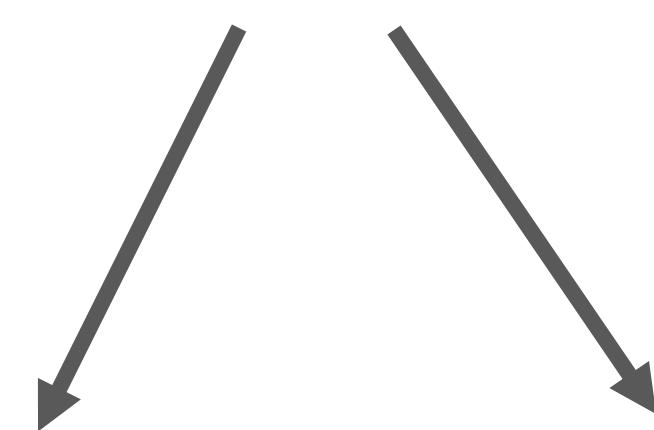
Objectives

The purpose of this project is to study how this viral disease, spread through cabbage aphids, affects mustards (genus *Brassica*). The majority of plant viruses are spread through arthropods, this project will aid in uncovering the best route to tackle the challenge of aphid-transmitted viral diseases in plants.

Acknowledgements

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Methods and materials



196 accessions from the USDA germplasm variety of *Brassica* species will be grown in greenhouse environment for 6-8 weeks. DNA samples will be collected and sequenced.

Plants will then be infected via aphid transmission. After level of infection will be rated on a scale from 1-10.



Genome-Wide Association Study (GWAS) will be used to look for possible genetic information that could promote disease resistance

The information can then be used in selective breeding practices to grow a disease resistant variety of *Brassica*.