

## Masterarbeit (M.Sc.) / Bachelorarbeit (B.Sc)

### Fachgebiet für Populationsgenetik

#### *Bachelor- und Masterarbeiten*

Das Fachgebiet für Populationsgenetik vergibt ab sofort eine Masterarbeit / Bachelorarbeit über Pathogenresistenz in Wildtomaten aus Südamerika (*S. chilense*). Die Arbeit umfasst gängige Methoden der Phytopathologie (Kulturtechniken, Infektionsmethoden) sowie klassische Mikrobiologie.

Thema: Variability of resistance to pathogens in wild tomato species

Background: We study the evolution of resistance to pathogens of *Solanum chilense*, a wild tomato species found in South-America (Chile and Peru). This species is found in several habitats ranging from coastal deserts to high altitudes in the Andes, and is suspected to be exposed to different pathogens. We have a collection of 13 populations from *S. chilense* from different habitats and one from *S. habrochaites* a closely related species. We want to assess if the different populations are resistant to various fungal (*Cladosporium fulvum*, *Alternaria solani*) or bacterial (*Pseudomonas sp.*) pathogens. It is expected that plants from northern and more humid habitats should present higher resistance to pathogens compared to southern populations from arid habitats.

Objectives: The student will be in charge of growing and multiplying plants for the experiments in the greenhouse complex in Dürnast, culture the pathogens for infection, perform the infections, score and analyse the results. Further analysis of ecological parameters for each population and connection to other ongoing experiments on abiotic stresses can be added if time permits.

Methods: Microbiology, plant pathology methods for infection, statistical analysis of the results. Detached leaf assay is being currently developed on this species in collaboration with Dr M. Heß and Prof Dr R. Hückelhoven at TUM.

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