



PARIS
LODRON
UNIVERSITÄT
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Lecture Series Environment & Biodiversity

**The “PATDOG” project -
olfactory detection of plant
pathogens in perennial crops
in fruit plantations.**

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Univ.-Prof. Dr. Gabriele Berninger



Friday, December 19, 2025, 2:00 PM

NLW-Faculty, Room 435, 3rd floor



Research focus:

Working dogs and fire blight



Abstract

The project "Olfactory Detection of Plant Pathogenic Pests in Perennial Crops in Fruit Plantations (PATDOG)" investigated the ability of dogs to detect plant pathogens such as *Erwinia amylovora* (the causative agent of fire blight in pome fruit) and *Cryphonectria parasitica* (the causative agent of chestnut blight in sweet chestnuts) in orchards. The aim of the project was to enable early diagnosis and control of these diseases in order to minimize economic losses.

Both under controlled experimental conditions and in the field, the dogs demonstrated high accuracy in detecting the test pathogens. They were able to identify cultures of *E. amylovora* and *C. parasitica*, and thus infected plants, with an accuracy of 84% to 100%, regardless of whether the plants were symptomatic or not. Investigations into potential pathogen spread revealed no evidence of contamination of the dogs. Additionally, the dogs were trained to detect odors both directly on infected plants and from air samples. In particular, air sampling, as a non-invasive method, allows for the rapid screening of large stands of trees.

The results show that detection dogs can be a valuable addition to existing plant health measures. They offer a fast, sensitive, and non-invasive way to detect plant diseases early and thus prevent or contain their spread.

About the speaker

Dr. Leopold Slotta-Bachmayr is a biologist specializing in ornithology, wildlife biology, and animal behavior. As experienced dog trainer, he works with rescue, detection, and therapy dogs and also serves as an expert on dog handling and dog training.

