UNIVERSITÄT BONN

Die Pflanzenwissenschaftlichen Institute

Einladung zum Pflanzenwissenschaftlichen Kolloquium

Freitag, den 16. Januar 2026, 12 c.t.

Nussallee 9, Hörsaal X

Referent: Dr. Pierre Abad

INRAE Institut Sophia Agrobiotech, Frankreich

Thema: „Plant Root-knot Nematode Interaction: A Sophisticated Dialogue“

Plant-parasitic nematodes cause agricultural losses exceeding €100 billion annually. Among them, the root-knot nematode (RKN) *Meloidogyne incognita* stands out as the most widespread and polyphagous obligate asexual endoparasite. What distinguishes RKNs from many other plant pathogens is their possession of specialized glands that secrete effector molecules directly into host tissues. These effectors reprogram differentiated plant cells into novel feeding structures, known as giant cells, which sustain nematode growth and reproduction. To address this challenge, we developed an integrated approach to functionally characterize RKN effectors and elucidate the molecular mechanisms underlying suppression of plant immunity. This work led to the identification of key host susceptibility genes that facilitate parasitism. In parallel, we designed a systems-based management strategy that integrates multiple agroecological practices to control RKN populations under real field conditions. By linking molecular discoveries with practical agricultural solutions, this framework offers sustainable pathways to enhance crop resistance and mitigate nematode damage. RKNs therefore represent a powerful model for investigating how genomic variation, reproductive strategies, and environmental adaptation drive parasitic success.

Diskussionsleitung: Prof. Dr. Florian Grundler, INRES Molekulare Phytomedizin

Zu diesem Vortrag und zu einer evtl. Nachsitzung sind Sie herzlich eingeladen