

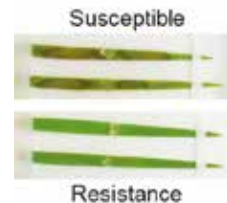


Assoc. Prof. NOUTOSHI Yoshiteru



For the control of crop diseases caused by a fungal pathogen *Rhizoctonia solani*

Rhizoctonia solani is a soil-borne fungal phytopathogen causing rice sheath blight as well as seedling damping-off or root rot in various crops. Management of this pest is difficult and it gives rise to serious damage in agriculture and economies. An experimental pathosystem using *Brachypodium distachyon*, an emerging model plant, revealed plant immunity mechanism against this pathogen leading to a novel insight into the fungal infection strategy. Fungal proteinaceous weapons called effectors are now being investigated.



Molecular basis of a biological control agent for crown gall disease in grapevine



Grape is one of the major fruits produced in Okayama. It suffers serious damage from crown gall disease which is caused by *Rhizobium vitis* Ti strain. A non-pathogenic strains of *R. vitis* have been isolated as biological control of this pest. The molecular mechanism underlying this suppression activity is investigating and we found a potential causal substance produced by this biocontrol agent.

Isolation and characterization of plant defense activators for sustainable agriculture

Plant defense activators exhibit crop protection activity by priming or inducing plant immune response. We established a quantitative assay method for plant defense response and identified potential compounds through a high-throughput screening of several commercial libraries of organic small molecules as well as a laboratory-made small cyclic peptides. They can be used for not only lead compounds to develop agrochemicals but also molecular probe to understand plant immunity.

