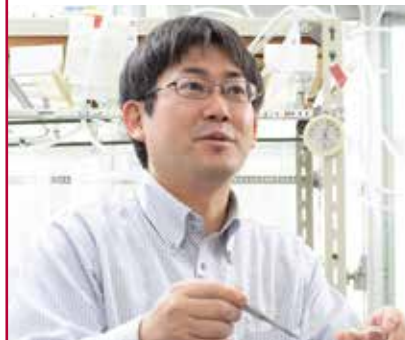




Prof.
GALIS Ivan



Assoc. Prof.
SHINYA Tomonori

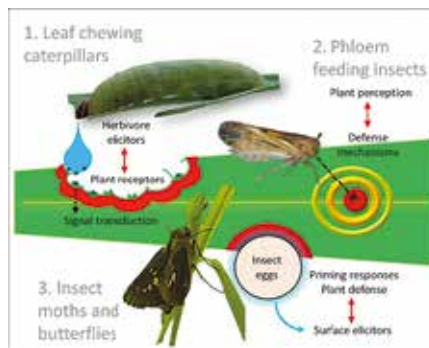


Understanding of metabolic defense against herbivores in plants

Plants activate powerful protective shield against feeding herbivores that involves biosynthesis of various toxic phytoalexins. While spectrum of phytoalexins in plants is vast, their biosynthesis and regulation during herbivory are less known. We use monocot plant models, including rice and sorghum, to identify novel metabolic patterns associated with herbivory. We look for transcriptional regulators involved in the regulation of biosynthetic genes for these compounds, in particular those induced in response to herbivore attack. We also study the role of plant hormones as secondary messengers in defense signaling pathways against herbivores.



Research on perception of herbivory in plants



The strength of plant defense largely depends on early detection of elicitor molecules from herbivores which are deposited in plant wounds during feeding. As the number of identified elicitors is still limited, we aim identification of novel elicitors using rice plants and their herbivores as our model systems. We develop efficient bioassays for rapid detection and isolation of novel compounds, use biochemical techniques for their characterization, and intact plants for functional analyses of these novel herbivory-associated molecular patterns (HAMPs).