

The interactions between the two-spotted spider mite and its plant hosts



ナミハダニと寄生植物の相互作用

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ABSTRACT

Plant-herbivore interactions evolved over long periods of time, resulting in an elaborate arms race between interacting species. While specialist herbivores evolved specific strategies to cope with the defenses of a limited number of hosts, our understanding of how generalist herbivores deal with the defenses of a plethora of diverse host plants is largely unknown. Understanding the interaction between a plant host and a generalist herbivore requires an understanding of the plant's mechanisms aimed at defending itself and the herbivore's mechanisms intended to counteract diverse defenses. We use the two-spotted spider mite (TSSM), *Tetranychus urticae* (Koch) as an example of a generalist herbivore, as this chelicerate pest has a staggering number of plant hosts. A high quality genome sequence and developing genetic tools, coupled with an ease of mite experimental selection to new hosts, make TSSM an outstanding system to study the evolution of host range, mechanisms of pest xenobiotic resistance and plant-herbivore interactions. In my talk, I will highlight our understanding of direct plant defenses against spider mite herbivory and mechanisms of spider mite adaptations to them. The knowledge of plant defense mechanisms that affect mite fitness are of practical importance, as it can lead to development of new control strategies against this important agricultural pest. In parallel, understanding mechanisms of mite counter adaptations to these defenses is required to maintain the efficacy of these control strategies in agricultural practices.



■会場/Venue

東京農工大学 府中キャンパス 2号館 講義室 2-22
Lecture Room 2-22, Building 2, Fuchu Campus, TUAT

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