

Alberto Urbaneja 博士（スペイン）による 2つの講演会のご案内
日本応用動物昆虫学会共催

講演会 1

「雑食性捕食者によりもたらされる植物の反応：農業害虫の生物的防除の新しい概念」

Plant response mediated by zoophytophagous predators: a new concept in biological control of agricultural pests

日時：平成 26 年 3 月 31 日（月）15 時から 17 時

場所：近畿大学農学部 新教室棟 312 教室（〒631-8505 奈良市中町 3327-204）

連絡先：近畿大学農学部昆虫生態制御学研究室

矢野栄二

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講演会 2

「スペインにおける総合的害虫管理計画：持続的農業の原理」

Integrated Pest Management programs in Spain: principles for sustainable agriculture

日時：平成 26 年 4 月 1 日（火）15 時から 17 時

場所：東京農業大学 食と農の博物館（〒158-0098 東京都世田谷区上用賀 2-4-

28）

会費 1000 円、懇親会 3000 円、先着 30 名までです。

連絡先：アリストライフサイエンス株式会社

和田哲夫

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講演会 1 の情報

Plant response mediated by zoophytophagous predators: a new concept in biological control of agricultural pests

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Biological Control (BC) uses natural enemies to suppress pests and reduce crop losses. BC is a cost effective and environmentally safe management strategy for many agricultural pests. During the last decade, BC programs in greenhouse tomato and other crops have been successfully implemented using zoophytophagous plant bugs (Miridae) which can feed on both plant tissues and insect prey. It is well known that plants respond to herbivore attack by releasing volatiles through diverse pathways triggered by phytohormones. These herbivore-induced plant volatiles (HIPVs) can alert neighboring plants, attract natural enemies, and repel herbivores. Nevertheless, possible benefits of induced plant responses by zoophytophagous plant bugs that could add to their usefulness as biocontrol agents have not been studied until now. Here we show that the zoophytophagous predator *Nesidiocoris tenuis* activates abscisic acid (ABA) and jasmonic acid (JA) signalling pathways in tomato plants which result in a non-preference effect on the whitefly *Bemisia tabaci*, a tomato worldwide key pest, and in attraction to the whitefly parasitoid *Encarsia formosa*, respectively. We also found that healthy tomato plants can express defense priming associated with plant feeding by *N. tenuis*. The JA pathway is activated in tomato primed plants and, as a consequence, the parasitoid *E. formosa* is also attracted to these plants. In addition, *N. tenuis* feeding increased the indole-3-acetic acid content (IAA) ratio between basal and apical parts of the plant enhancing yield. Thus, our results demonstrate that *N. tenuis* directly and indirectly increases plant performance. These results highlight the important role that zoophytophagous predators can play to improve the sustainability and resilience of agricultural systems.

講演会 2 の情報

Integrated Pest Management programs in Spain: principles for sustainable agriculture
Alberto URBANEJA and Meritxell PÉREZ-HEDO

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The European Union Directive on sustainable use of pesticides (Directive 2009/128/EC) enforces the implementation of efficient alternative pest control methods. Mass trapping, biological control, selective pesticide applications, chemosterilization and Area-Wide-SIT are currently used in combination as part of an Integrated Pest Management (IPM) programmes in Spain. The combination of all these management strategies is effectively reducing dependence on pesticides in selected major cropping systems, hence improving food safety and quality. During the last decade, IPM strategies for various major pests have been successfully implemented in various crops in Spain. The wide adoption of alternative pest control methods have entailed a substantial pesticide-use reduction, a regulatory policy that the European Union is currently pushing up as the only way to guarantee a sustainable agriculture. The adoption of IPM as the main pest control strategy, has favored a radical shift in favor of concepts of final product quality and production methods. Despite these IPM successes, there are still some exciting challenges as well as to solve some new problems that have appeared recently. These and other aspects will be discussed in this presentation.

Keywords: IPM solutions, pesticide reduction, biological control agents, commercialization of biocontrol agents,

(報告者 常任評議委員・宮竹貴久)