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**Keywords:** *Xylella fastidiosa*, vectors, host plants, preference

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**P015. Impact of cross-mating on sexual interactions of two strains of *Trogoderma granarium* Everts (Coleoptera: Dermestidae)**

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In this study, we examined the impact of lateralization on male mating behavior and success of two strains of *Trogoderma granarium* Everts (Coleoptera: Dermestidae), originating from two different geographic locations (i.e., Turkey and Czech Republic), testing all possible cross-mating combinations. The identification of *T. granarium* was performed through DNA sequencing. For this purpose, three genetic markers (i.e., Cytochrome Oxidase I, large subunit ribosomal RNA, and Cytochrome b) were used. From a behavioral point of view, most males of the Czech strain performed left-biased approaches, utilizing the right foreleg to explore females, achieving higher percentage of successful copulations over the right-biased males. Although more males of the Turkish strain exhibited right-biased approaches, if compared to the left-biased males, the highest proportion of mating success was achieved by left-biased males. When beetle strains were cross-mated, all possible combinations showed population-level left-biased approaches to potential mates, and right-biased exploration of females with foreleg, achieving high mating success. Significant differences were noted in the duration of copulation within each strain (i.e., Czech male with Czech female, Turkish male with Turkish female), while no significant differences were recorded in the duration of each phase during their cross-mating. The fact that cross-mating among strains affects courtship, mating success and laterality of this important stored-product insect pest adds useful knowledge to its basic biology as well as to mass-rearing implementation techniques.

**Keywords:** behavioral asymmetries, cross-mated, lateralization, molecular ecology, successful copulation, stored-product pest

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**P016. Effect of the plant community on the numerical and behavioral dominance of ant species in pineapple cropping systems in Reunion Island**

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In Reunion Island, as in other production areas, pineapple cultivation is largely impacted by the Wilt virus complex. Mealybugs of the *Dysmicoccus brevipes* species are the main mealybugs found on pineapple and are vectors of these viruses. However, other species such as ants are involved in this complex pathosystem. Ants usually nurture and protect the mealybugs from predators, while the latter provide honeydew to the ants. This mutualism greatly complicates the regulation of mealybugs by biological control. Indeed, ants can attack or prevent predators from feeding on mealybugs and even reduce the effectiveness of potential parasitoids. In Reunion Island, the ant species involved in this mutualism have not yet been described. In order to characterize the ant communities in pineapple cropping systems, we used an imagery approach that combined in-field image captures and computer vision algorithm to ease the detection and determination of species at play. Associated with these measures, we also determined the plant community at each observation locations. The objective was (i) to determine which ant species are most involved in the frequentation and protection of mealybugs and (ii) to measure the impact of the plant community on the numerical and behavioral dominance of ant species in pineapple systems. We discuss our results in terms of potential management of the ant communities through the plant community allowing a better mealybug regulation.

**Keywords:** *Ananas comosus*, mealybug, behavioral ecology, imagery, ants

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#### P018. Exploring West Nile virus ecology in Greece: interactions between hosts, vector, and the environment

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Mosquitoes play a vital role in the transmission cycle of vector-borne infectious diseases, such as West Nile virus (WNV), but the intensity of WNV transmission is dependent on complex ecological interactions between the virus, vectors, and hosts. Variations in viral lineages, vector ecology and abundance, and host availability are some of the factors affecting infection rates and the potential for new outbreaks. Particularly variation in mosquitoes' feeding preference is considered one of the most important parameters, driving intensity and timing of WNV infection. To enhance surveillance and control efforts, it is important to examine this multifaceted phenomenon holistically and over space and time. During 2020-2021, an integrated surveillance study was conducted in Northern Greece and Peloponnese-known WNV foci based on past outbreaks – to provide new insights into the ecology of WNV in the region by studying: vector seasonality, host feeding patterns, and WNV infection rates. Mosquitoes were collected each season (May-September) from urban/semi-urban, agricultural, and natural sites within the target regions to determine presence and abundance of competent mosquito vectors in different ecological settings and their WNV infection rates. Four different mosquito species were found infected with WNV and among those *Culex pipiens* demonstrated the highest infection rates. *Cx. pipiens* was the most dominant species across all ecological settings, demonstrating an opportunistic feeding behavior by feeding on mammals, birds, amphibians, and reptiles. The possible role of all four mosquito species in WNV transmission will be discussed and gaps in knowledge that should drive future research will be identified.

**Keywords:** WNV, vector surveillance, infection rates, mosquito feeding preference, blood meal analysis

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