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SESSION VI
INSECTS AND MICROORGANISMS

Detection of honey bee viruses in adults and larvae of *Vespa orientalis*

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The Oriental hornet (*Vespa orientalis*) is native to the southeastern Mediterranean, north-eastern and eastern Africa, the Middle East, Central Asia and it is well established in southern Italy. However, recent reports in Liguria, Trieste and Tuscany show great expansion of its areal probably due to climate change or involuntary anthropic actions. Adults feed on carbohydrates collected from fruit and nectar while brood is fed by workers with animal proteins (grasshoppers, flies, yellowjackets and bees). The interaction between the two species could lead to possible spillover of pathogens in both directions. Previous studies have already reported the presence of honey bee pathogens (virus, fungi and bacteria), in Vespae and have underlined their role in disseminating pathogens which could represent a threat for honey bees.
Aim of this study was to detect the presence in *V.orientalis* of six honey bee viruses, more precisely Acute Bee Paralysis Virus (ABPV), Black Queen Cell Virus (BQCV), Chronic Bee Paralysis Virus (CBPV), Deformed Wing Virus (DWV), Kashmir Bee Virus (KBV), Sac Brood Virus (SBV), and to investigate possible transmission route. 30 adults and 29 larvae of *V.orientalis* and 2 pools of 10 honey bees (*Apis mellifera ligustica*) each were collected from the managed nest and apiary located both at the Department of Agricultural, Food and Forest Sciences-University of Palermo, and sent to the Department of Veterinary Medicine and Animal Productions-University of Naples “Federico II”. Samples were observed by stereomicroscope to assess possible alterations which could be indicative of the action of viruses and then subjected to multiplex PCR to detect viruses.
No morphological alterations were identified despite the biomolecular results showed 25/30 adults and 24/29 larvae were infected with at least one virus (DWV). Adult samples presented also ABPV (19/30), BQCV (13/30), SBV (1/30); while larvae presented SBV (10/29), ABPV (5/29), BQCV (5/29). No sample resulted positive for CBPV and only 1/30 adult resulted positive for KBV. Honey bees’ positivities reflected those of the hornets: 2/2 DWV, 2/2 SBV, 2/2 BQCV and 1/2 ABPV. The viruses detected in our study are the most prevalent in apiaries across Italy and the overlapping of positivities between hornets and honey bees collected in the same site suggests possible transmission of honey bee viruses through ingestion of infected honey bees.

KEY WORDS: Oriental hornet, virus, pathology, *Apis mellifera.*

ORAL PRESENTATION