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Book of Abstracts

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Chair: Marcia González-Teuber

O-11 Insect-corn kernel interaction: Chemical signaling of the grain and host recognition by *Sitophilus zeamais* (Coleoptera: Curculionidae)

Virginia L. Usseglio^{1,2*}, Yesica P. Zaio^{1,2}, José Sebastián Dambolena^{1,2,3}, Carolina Merlo^{1,4}, María L. Peschiutta^{1,2}, María P. Zunino^{1,2,3}

¹*Instituto Multidisciplinario de Biología Vegetal (IMBIV)-UNC-CONICET.*

Avenida Vélez Sarsfield 1611, Córdoba, Argentina.

²*Instituto de Ciencia y Tecnología de los Alimentos (ICTA) - Facultad de Ciencias Exactas, Físicas y Naturales (FCEFYN)- Universidad Nacional de Córdoba (UNC).*

Avenida Vélez Sarsfield 1611, Córdoba, Argentina.

³*Cátedra de Química Orgánica y Productos Naturales, FCEFYN-UNC.*

Avenida Vélez Sarsfield 1611, Córdoba, Argentina.

⁴*Cátedra de Microbiología Agrícola, Facultad de Ciencias Agropecuarias (FCA)-UNC.* Ing Agr. Felix Aldo Marrone 746, Córdoba, Argentina.

*Correspondence: vusseglia@imbiv.unc.edu.ar

In living organisms, the cuticle has structural functions and is involved through chemical signaling in biological interactions such as plant-insect and provides protection against biotic and abiotic factors, thereby avoiding desiccation or predators' attack. The objective of this study was to investigate the participation of the epicuticle in the interaction of the maize kernel and the maize weevil *Sitophilus zeamais*. For this study the extraction of epicuticle was carried on and the extract was analyzed by GC-MS. Digital photographs of cross sections of grains with and without epicuticle were taken, and behavior bioassays were carried out with both grains with and without epicuticle and epicuticle extracts. The GC-MS analysis of the epicuticle extract demonstrated the presence of aliphatic hydrocarbons, alcohols, ethers, fatty acids, sterols and their derivatives. The results of preference bioassays showed that the epicuticle of maize has a primordial role in its interaction with *S. zeamais* participating in the recognition and attraction to the food source. According to these results, in the assay of kernels' susceptibility to insect attack, kernels without epicuticle were significantly less damage than kernels with epicuticle. In progeny assays, the exposition of *S. zeamais* adults to kernels without epicuticle caused a reduction in progeny, indicating that it could regulate the reproduction of *S. zeamais*. In addition, the compounds present in the epicuticle extract may act as signalling molecules and developmental regulators. This study reveals the effect of the maize kernel epicuticle on *Sitophilus* behavior and contributes to the understanding of their interaction.