ABSTRACT OF THESIS HUNGARIAN UNIVERSITY OF AGRICULTURE AND LIFE SCIENCES PLANT PROTECTION INSTITUTE, KESZTHELY

Susceptibility Levels of Hungarian pollen Beetles (Brassicogethes

aeneus) to Thiacloprid

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Pollen beetles (*Brassicogethes aenues*) are one of the predominant pests wreaking havoc in European winter oilseed rape fields. Thiacloprid, an active ingredient in the class of neonicotinoids, was introduced to manage resistance imposed by the pest to pyrethroids. Therefore, this study aimed to investigate whether there is a susceptibility decline to thiacloprid, which is used against pyrethroid-resistant pollen beetles (*Brassicogethes aenues*), which might have already developed and could be a precursor to resistance.

Samples of pollen beetles (*Brassicogethes aenues*) were collected from Sorkifalud- a rapeseed cultivating area in Hungary in 2018 and 2019. They were subjected to different concentrations of thiacloprid and acetone as controls to determine their susceptibility to the active ingredient. The method used entailed

Insecticide Resistance Action Committee (IRAC) Susceptibility Test Method No: 021 version 3.4 (Adult- Vial- Test for neonicotinoids) using thiacloprid as reference. Analysis was performed using the Kruskal-Wallis mortality test. According to the results, a lower mortality rate is realized against most concentrations of thiacloprid used with the concentration of $0.72 \,\mu\text{g/cm}$, which corresponds to 100% typical field rate could cause a mortality rate of 75% and 72.5% respectively in both years and concentration of 1.44 $\mu\text{g/cm}$ of thiacloprid (200% typical field application rate) could only cause 100% mortality rate. The presence of thiacloprid-resistant Pollen beetles (*Brassicogethes aenues*) population calls attention to additional monitoring to enhance the development of strategies to address insecticide resistance.