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**The title of the doctoral dissertation:**

Harmful entomofauna of herbal plants grown on plantations near Rzeszów

**Summary:**

Poland is a country with a great potential in growing herbs and spices. In connection with the ever-increasing demand for domestic raw materials and herbal products, there is a need to protect plantations from pests. In the national literature, few studies raise the issue of harmful insects damaging herbs, and the information contained in available studies has not been verified for a long time. This creates a serious difficulty in identifying the species of pests, that is connected with the choice of the appropriate methods of eradicate them.

Markowa is a village located in Podkarpackie Voivodeship that has been associated with the herbal production for many years. Herbs and spices grown in this town, like most agricultural plants, are exposed to harmful entomofauna. Many factors contribute to the emergence of pests in herbal cultivations. One of them is the use of processed herbal raw material in medicine, cosmetology or gastronomy. Enterprises that buy herbs and spices force the maintain of microbiological purity of the raw material, which is related to the restrictions in the use of plant protection products that regulate populations of harmful insects. Favorable habitat conditions can lead to massive outbreaks of pests, which may affect the quality of the obtained material and the amount of crops.

Due to the above, the aim of this dissertation was to determine the qualitative and quantitative structure of entomofauna occurring on the most popular herb species cultivated in the area of Markowa village, specifying the species that cause the biggest threat as well as understanding the biology of the most abundant pests, the number of generations during the growing season and the type of the damages. The observation included four selected species of herbs that are most commonly cultivated in the town: Garden Angelica (*Angelica archangelica* L.), Purple Coneflower (*Echinacea purpurea* (L.) Moench), Garden Lovage (*Levisticum officinale* WDJ Koch) and Chinese Rhubarb (*Rheum palmatum* L.).

During four-year field observations, it was found that *R. palmatum* was the most commonly inhabited by insects herbaceous plant. Among the observed and caught entomofauna from the moulting plantation, a clear advantage of representatives of the Coleoptera was noticed. It has been shown that the activity of the most numerous beetle species such as Green Dock Beetle (*Gastrophysa viridula* (De Geer, 1775)) and Mangold Flea Beetle (*Chaetocnema*

*concinna* (Marsham, 1802)) had a significant impact on the quality of the cultivated plants. In addition, in 2014, during the observations that were conducted, the occurrence of Dock Sawfly (*Ametastegia glabrata* (Fallén, 1808)) larvae was recorded, which as a result of conducted feeding were skeletonising leaves leading to defoliating. The above mentioned species of insects were subjected to laboratory observations, where the attempt to determine their biology was tried, as well as the harmfulness to the cultivated herbal plants.

On the lovage plantings the extensive damage of plants was observed due to feeding of Celery Fly (*Euleia heraclei* (Linnaeus, 1758)) larvae in the parenchyma of leaves. On the basis of the observations of randomly selected plants, the occurrence of the larval forms were determined. The conducted experiment allowed to estimate the number of occurring generations of pests during the growing season.

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