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REAKCJE ADAPTACYJNE WYBRANYCH GATUNKÓW MSZYC (HEMIPTERA: APHIDOIDEA) NA
WZROST TEMPERATURY

The observed climatic changes, including temperature increases, are predicted to affect both herbivorous insects and their host plants. Climate warming may affect aphids directly by influencing their biology and metabolism and indirectly by changing the quality of the host plants. The aim of the study was to find out the influence of temperature increase on aphid biology and the mechanisms of aphid adaptation to temperature increase. The experiments were conducted in three temperatures (20, 25 and 28 °C) in climate chambers. First, the influence of temperature on the biology and demographic parameters of two species of aphids, *Aphis pomi* and *Macrosiphum rosae*, were determined. Then, the enzymatic activity of selected antioxidant markers (superoxide dismutase (SOD), catalase (CAT)), detoxification (S - glutathione transferase (GST), β - glucosidase) and redox (polyphenol oxidase (PPO) and peroxidase (POD)) markers were analysed in aphid tissues (*A. pomi* and *M. rosae*) and host plants (*Chaenomeles japonica* and *Rosa rugosa*) on which the insects had been feeding. The analyses showed that the temperature of 28 °C had a negative impact on the biology of insects by reducing the reproductive time and longevity, as well as decreased fecundity and demographic parameters. Two stages of the defence reaction to the increase in temperature were observed in aphids. The first stage was the response to short-term exposure to temperature rise (24–96 h), while the second stage was the response of the aphids to changes in the host plant subjected to long-term abiotic and biotic stress (2 weeks).