P.03 - The impact of low temperature stress on the development of Leptinotarsa decemlineata

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Estonia does not belong to the favourable region for Colorado potato beetles (CPB) because of the cool climate and unstable weather conditions. Adults and immature stages of SCB may encounter low temperatures throughout most of the developmental period. In this study the subsequent development and viability of progeny of CPB beetles developed from larvae and exposed to, in the 1st instar, low temperature stress, 7±1 °C for 72 h, was monitored. The control group was reared at temperature 22±1.0 ºC in a 6:18h D: L photoperiod. The beetles stopped feeding at temperatures lower than the threshold for development. Mortality following cold stress was 36.6% until larvae achieved the adult stage; the control had a mean mortality as low as 10%. The mean mass of beetles formed in the cold treated variant was 99.8±8.9, in control 143.8±7.4 mg ($p<0.05$); mean number of eggs per clutch 18.2±3.4 and 36.0±5.8 and mean mass of eggs 0.61±0.09 and 0.84±0.05 mg respectively ($p<0.05$). Thus the low temperature experienced in the larval stage could cause significant changes in their later development up to the next generation and is one of the factors which limit the spread of beetles in our country.