

P.04 - Cold hardening of some ground beetle species

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Cold-hardiness is the ability of insects to survive low temperatures, with or without freezing. The supercooling point (SCP) is the temperature at which spontaneous freezing occurs. The aim of the present research was to study seasonal cold adaptation dynamics of the predatory ground beetle species *Carabus granulatus* L. and *Agonum assimile* Payk. (Coleoptera, Carabidae). Seasonal changes in mean SCP values in *C. granulatus* were determined as follows: -4.4 °C (in January 2007), -5.3 °C (in May 2007), -6.3 °C (in September 2007) and -5.6 °C (in February 2008). Mean SCPs examined were determined in *A. assimile*: -8.7 °C (in February 2007), -6.8 °C (in June 2007) and -9.3 °C (in October 2008). Lethal mortality 50 and 90% temperatures (LT₅₀ and LT₉₀) after 24 hours influence were -7.2 °C and -7.7 °C in *C. granulatus*, and -7.2 °C and -7.9 °C in *A. assimile*, respectively. The tests showed weak supercooling ability of this species and according to Hawes and Bale (2007) classification *C. granulatus* and *A. assimile* belong to a freeze-tolerant cryotype.