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Effect of temperature on thermogenesis of fleas

Sergii Mytrofanov[1], **Lidiia Kornieieva**[1] and **Mykola Sinytskyi**[2]
[1]ACRO Vet Lab, Ukraine
[2]National Academy of Statistics, Accounting and Audit, Ukraine

Statement of the Problem: According to the classification of types of thermogene-sis, fleas are inherent in a complex RT-type paroxysm that is formed out of a calm (base) R-type thermogenesis with intermit-tent spikes of (active) T-thermo emission. Micro calorimetry allows us to study the influence of environmental temperature on the dynamics of metabolism of insects.

Methodology & Theoretical Orientation: A differential conductive micro calo-rimeter with a heat coupling of intermedi-ate type designed at Shevchenko National University of Kiev was used to carry out the series of experiments. Input sensitivity was set to 0.5 mW/mm of scale, time reso-lution – 30 seconds. The studies were con-ducted on groups of 10 imago *X. Cheopis*, in an insulated 2 cubic centimeter capsule during 2-3 days at 8 to 30 degrees centi-grade.

Findings & Conclusions: The analysis of experimental results shows that the average strength of thermo emission increases as $1.26 \cdot e^{0.086 \cdot T}$ mW/g. The specific strength of active thermo emission of fleas is an average of 24% of the level of mail thermogenesis at 8 to 10 degrees centi-grade, and 84% at 25 to 30 degrees centi-grade accordingly. A growth of the level of a heat produced by fleas with rising environmental temperature indicates an increase in their motor activity and maintaining the viability.

Biography

Sergii Mytrofanov works in field of Pre-clinical and clinical studies. He has experience in development and improvement of ectoparasite culture cultivation methods. He has up to 10 scientific publications and two authorship certificates. He is Parasitologist, Head of Parasito-logical department of ACRO Vet Lab, Ukraine. From 2004-2010, he studied at National Ag-ricultural University (later was renamed to National University of Life and Environmental Sciences of Ukraine) where he received a Specialty of Veterinary Medicine Doctor. During 2010, he worked at State Scientific Control Institute of Biotechnology and Microorganisms of Ukraine as leading Veterinary Medicine Doctor. From 2011-2013, he pursued his Post-graduation in Parasitological department of Faculty of Veterinary Medicine NULES of Ukraine. He has up to 10 scientific publications and two authorship certificates.

smit@acrovet.org

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