

# HOST RELATED DIFFERENCES IN THE DEVELOPMENT AND REPRODUCTION OF THE CEREAL RUST MITE, *ABACARUS HYSTRIX* (ACARI: ERIOPHYIDAE) IN POLAND

Anna Skoracka<sup>1</sup> and Lechosław Kuczyński<sup>2</sup>

1. Department of Animal Taxonomy and Ecology, Institute of Environmental Biology, Adam Mickiewicz University, Umultowska 89, 61-614 Poznań, Poland (e-mail: skoracka@amu.edu.pl, corresponding author); 2. Department of Avian Biology and Ecology, Institute of Environmental Biology, Adam Mickiewicz University, Umultowska 89, 61-614 Poznań, Poland (e-mail: lechu@amu.edu.pl).

**ABSTRACT** - Specific feeding and habitat conditions for phytophagous insects and mites are created by their host plants. Adaptations to the specific host plant may be reflected in differences in the life-history traits of phytophagous arthropods. Herein we tested whether host populations of the eriophyid mite *Abacarus hystrix* (Nalepa), adapted to feed on their natal host plants, differ in life history parameters. For this purpose the developmental time, survivorship, longevity and fecundity of *A. hystrix* living on two grass species, *Lolium perenne* L. and *Elymus repens* (L.) Gould, were compared. No significant differences in immature and male survival, sex ratio, median adult longevity and mean fecundity were recorded between host populations. Significant differences in the developmental time, female survival and oviposition rate between populations studied were found. Immature development and the total developmental time from egg to adult were significantly longer on *L. perenne* compared to *E. repens*. Females from *E. repens* survived significantly longer than females from *L. perenne*. Females from *E. repens* oviposited at a slower rate, had two oviposition peaks, and throughout their life the oviposition increased and decreased gradually. Females from *L. perenne* oviposited at a faster rate, had only one oviposition peak, and the oviposition increased and decreased rapidly. It is concluded that *A. hystrix* populations from *E. repens* and *L. perenne* differ in allocation of resources for development and reproduction. These differences may result from different degrees of adaptation of each population to various host plant characteristics. The effect of chemical composition and physical structure of the host on *A. hystrix* development and reproduction is discussed. The results obtained here support the hypothesis that the two populations of this mite from *E. repens* and *L. perenne* are highly specialized in their host use and may be regarded as host races or separate species.

**Key words** - Acari, Eriophyidae, grasses, host plant, host races, life history traits, life strategies, phytophagous mites, survival, Poland.

Abstract # 10

Internat. J. Acarol. 32(4): 397-405.