

A prevalence study on *Dermanyssus gallinae* in laying hen farms in Southern Italy

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Dermanyssus gallinae, the poultry red mite, is a cosmopolitan arthropod of domestic and wild birds, which is also capable of biting humans. This ectoparasite is one of the most important causes of economic losses in poultry industry due to its haematophagous behaviour and its role as a vector of pathogens. Epidemiological surveys about its presence in poultry farms have been carried out in some European countries. In Italy, *D. gallinae*-associated dermatitis has been registered in humans living in rural and metropolitan areas while its presence on poultry farms is limited to a single prevalence study in traditional poultry farms. In order to investigate the prevalence and the general scenario of red mite infestation in Italian farms, all the intensive laying hen farms (58) in the Apulia region were inspected for the presence of *D. gallinae*. Contextually, a questionnaire was used to gather information about the farm (size, housing type, and building age), the farmers (education level, and their perception of the problems related to red mite infestation), and management practices (methods of red mite control, frequency of treatment and timing). Out of 58 poultry farms visited, 43 (74.1%) farms were found to be infested by *Dermanyssus gallinae*. Out of the 26 small-sized farms, 24 (92.3%) farms, representing 41.4% of the total examined farms, were found to be infested. All farmers (100%) declared to know red mites. However, 30 of them (51.7%) reported that their poultry were affected by *D. gallinae* with symptoms related to red mite infestation. Forty-three out of 58 (74.1%) farmers admitted the frequent use of acaricides as control measures against red mite. The results showed that *D. gallinae* is widely present in battery hen units in the Apulia region, with a very high prevalence compared to other European countries. The prevalence registered in the smaller units is relevant and the poor hygiene and the steady cycle without a production pause contribute to increase the infestation. Furthermore, the application of self-devised and the widespread use of acaricides may enhance acaricide-resistance in *D. gallinae*. This first study highlights the urgent need for farmers and technicians to be correctly informed in order to reduce the risks for animal and also human health, and the pressing requirement for research on safe and modern control measures against this ectoparasite.

Keywords: *Dermanyssus gallinae*, laying hens, prevalence