In vitro effectiveness of caricides available on the market in Poland against national populations of *Dermanyssus gallinae*

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The control of poultry red mites *Dermanyssus gallinae* (De Geer, 1778) is very difficult due to the high resistance of these parasites to acaricides. The aim of the study was to determine the resistance of *D. gallinae* mites from various farms in Poland to commonly used acaricides and to indicate the most effective preparations available on the market for their control. The research was carried out in 2015–2019 in 42 cage farms for laying hens located in 13 voivodeships of Poland. The research was carried out on 10 acaricidal preparations in relation to red mites, available on the market, containing, among others, active substances: avermectin, cypermethrin, permethrin, bendiocarb, carboxylate, phenoxybenzyl, carbamate and silicon dioxide. The research was carried out using the own method (Cencek et al. 2011; Zdybel et al. 2011), assessing the sensitivity of mites collected from farms 24 hours after application.

It was established that the sources of mite infestation in the farms covered by the study were hens, eggs and egg collection nets brought from other farms. In most farms, the most intense infestations of red mites occurred in late spring. Acaricides containing bendiocarb – FICAM 80 and preparations containing silica BIOBECK (silicon dioxide) and RECIDAL SIL (diatomaceous earth) showed the highest effectiveness against the majority of the red mite population. Their maen effectiveness was 97.3%, 94.2% and 91.02%, respectively. Contrary to preparations containing pyrethroid compounds. The preparation with a physical effect based on the 3D-IPNS technology (3D-Immobilizing Polymeric Net Structure) DERGALL turned out to be equally ineffective 24 hours after the application.