

COMPARISON OF EFFICACY AND ATTRACTIVENESS OF FIVE COMMERCIAL GEL FORMULATIONS TO CONTROL COCKROACHES IN LABORATORY TESTS

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Abstract We report the results achieved in laboratory tests conducted to compare the efficacy and the attractiveness of commercial gel formulations, containing abamectin, fipronil, indoxacarb, acetamiprid and imidacloprid, for the control of nymphs and adults of cockroaches. The tests were replicated 4 times and were carried out by in special arenas of 1 1 m² surface each. *Blattella germanica* (L.), *Periplaneta americana* (L.) and *Periplaneta australasiae* (F.) were the species considered in the study. In particular *Periplaneta australasiae* settled recently in several cities in Italy, probably due to the importation of food from the South-East Asia which is sold in specialty stores. At any assessment all the cockroaches placed in the Untreated Control arenas resulted alive and fully active. In terms of number of dead individuals, all the products showed a variable activity on the three species of cockroaches considered, but in two cases no mortality was recorded, while in other two cases full mortality was observed. On the base of the mortality percentage achieved the data statistically elaborated indicate that after 48 hours only the fipronil based gel showed a statistically significant difference against both stages of *B. germanica*, which was totally controlled. All the other treatments, including fipronil on *P. americana* and *P. australasiae*, recorded a mortality of cockroaches without significant statistical differences. The tests must be considered as preliminary study, which allow to affirm that the different gel formulations currently available in Italy for the control of cockroaches, show a low efficacy 48 hours after application with no statistically significant difference among them against *P. americana* and *P. australasiae* at any stage of development. However, gel containing fipronil 0.05% reached an efficacy statistically significant and higher than the other gel formulations against *B. germanica* at both stages of development, while on *P. americana* and *P. australasiae*, achieved an efficacy statistically similar to the other 4 gel formulations tested. In case of limited control by gels in the short term, traditional sprays are recommended, limiting the use of the gel only at points of infestation deemed not at serious risk of diffusion, such as electrical cabinets, closets, toilets.