A topical administration of a dinotefuran-pyriproxyfen (Vectra Felis) combination on cats controls immature stages of fleas for over 3 months

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INTRODUCTION

Immature stages of fleas represent the largest proportion of a flea population in the environment of companion animals. For reliable control, it is widely recommended to target the insects before they emerge in adults. This study assessed on cats the immediate and residual efficacy of a topical combination of dinotefuran-pyriproxyfen (Vectra® *Felis*, DP) against immature stages of fleas.

METHODS

This study was blinded and performed according the principles of Good Clinical Practices. The protocol was approved by an ethical committee. After at least 14 days of acclimatization and based on pre-treatment flea retention rates, adult domestic cats were allocated to 2 groups: a control group (n=8, 3.19±0.50 kg BW) and a DP treated group (n=8,

2.81±0.44 kg BW). The cats in the treated group were administered 0.9 mL of DP on day 0 while cats in the control group were untreated. The cats were infested with 100 adult fleas (*Ctenocephalides felis*) on days -12, 10, 21, 28, 35, 46, 53, 60, 81 and 90. Flea eggs were collected under the cages for 3 days after each infestation and adult fleas were removed from the animals. The eggs were incubated for 3 days prior to egg hatching assessment. The adult emergence was assessed after 35 days of egg incubation. The proportion of emerged adult fleas and the proportion of hatched larvae were transformed to the arcsine of the square root and means of the transformed data were retransformed. The groups were compared at each time-point by one-way ANOVA. The level of significance was set at 5%. The cats were under general health observation for the duration of the study.

RESULTS

In the control group, egg hatching ranged from 59.8 (day 16) to 94.8% (day 31). Adult flea emergence ranged from 47.5 (day 48) to 65.5% (day 84). In the DP treated group, egg hatching ranged from 0 to 3.4%. Egg hatching inhibition was above 96.1%. Adult flea emergence ranged from 0 to 0.5%. Adult flea emergence inhibition was above 99.1% for 90 days. The treated cats tolerated the product well: only slight scaling (3/8 cats) and very slight erythema (2/8 cats) potentially related to treatment were observed and resolved spontaneously within 24h. This study demonstrated that a single topical administration of DP can inhibit the development of immature stages of fleas for 3 months.

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