PARASITIC DISEASES

Efficacy report of a fluralaner pour-on product against common ectoparasites infesting cattle in Brazil

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INTRODUCTION

This study describes the effectiveness of a novel active pharmaceutical ingredient, fluralaner from the isoxazoline class, against important ectoparasites infesting cattle in Brazil

OBJECTIVE

This report comprises the findings from efficacy studies of a novel pharmaceutical molecule, fluralaner (belonging to a new chemical class called the Isoxazolines), against important ectoparasites infesting cattle in Brazil.

MATERIALS AND METHODS

In total, thirteen studies were conducted with a 5% fluralaner pour-on formulation (Exzolt® 5%). Out of thirteen studies, six studies investigated the effectiveness of Exzolt® 5% against Rhipicephalus microplus (field and controlled studies), four against *Cochliomyia hominivorax* larvae, one against *Dermatobia hominis* larvae and two against *Haematobia irritans* flies. Prior to treatment in each study, appropriate pre-treatment parasite counts were done, and the selected animals were assigned to one of two treatment groups in accordance with a randomized block design.

A negative control Group (T02) was included in all studies, in which animals were treated with a placebo formulation. The animals of Group T01, in each study, were treated with Exzolt® 5% at a dose of 2.5 mg fluralaner/kg bodyweight (BW). In all studies, animals belonging to the two treatment groups remained separated to avoid the possibility of cross-contamination between the placebo and fluralaner treated animals.

Overall results from these studies confirm that Exzolt® 5% provides a therapeutic efficacy against the most important ectoparasites infesting cattle in Brazil, along with an impressive persistent efficacy against re-infestation. The novel active pharmaceutical ingredient, fluralaner, provides a new treatment option for farmers to control these cattle ectoparasites, especially where there is resistance to other chemical classes. An effective control of ectoparasites, in turn, will improve overall cattle health, well-being and production.

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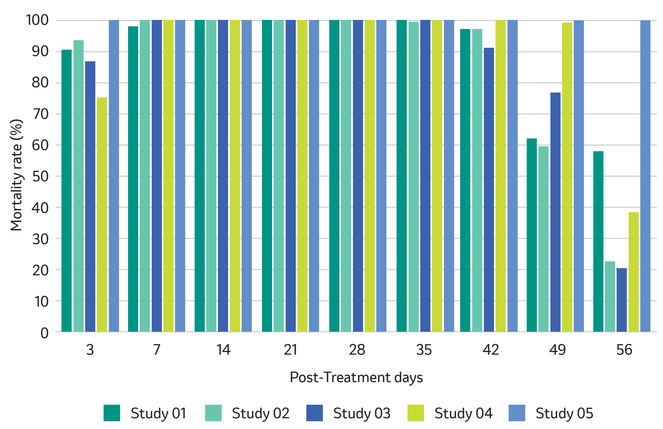
RESULTS

In 5 studies the therapeutic efficacy of Exzolt 5% against field strains of *R. microplus* was assessed on days 3, 7, 14 and 21 post treatment (D3, D7, D14 and D21). Engorged female ticks between 4.5 and 8.0 mm in length were counted on each occasion. The therapeutic efficacy was > 95% at all study sites.

On D3, efficacy was < 90% at only two sites (studies 3 and 4). Tick counts continued on a weekly basis after D21 to determine the persistent efficacy of Exzolt 5%. A persistent efficacy of > 90% which was found to be 42 days at three sites (studies 1, 2, and 3), 49 days for study 4 and 56 days for study 5.
(Fig. 1)

FIGURE 1. Efficacy of Exzolt 5% against a natural *R. microplus* infestation.

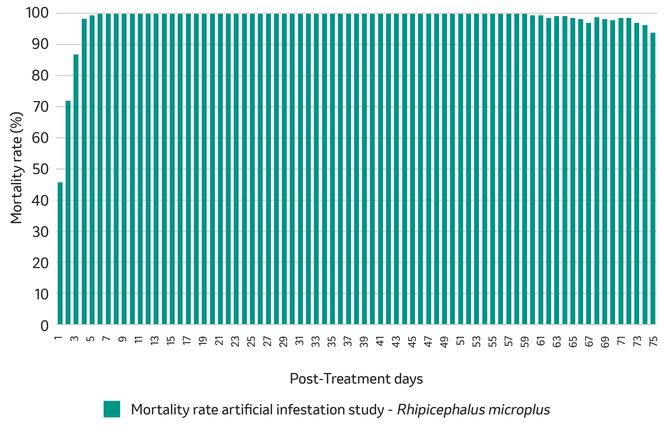


RESULTS

This study assessed the therapeutic and persistent efficacy of Exzolt 5% against artificial infestation and ongoing larval challenge of *R. microplus*. Assessment was conducted by the counting of engorged *R. microplus* female ticks which had detached from the animal and were collected each morning until the completion of the study on D75.

Therapeutic efficacies of 98.3% and 99.4% were observed on days 4 and 5 post-treatment and of > 99.9% between 6- and 22 days post-treatment.
An average therapeutic efficacy of 95.1% up to D22 and a persistent efficacy (> 90%) until D70 were observed in this study. **(Fig. 2)**

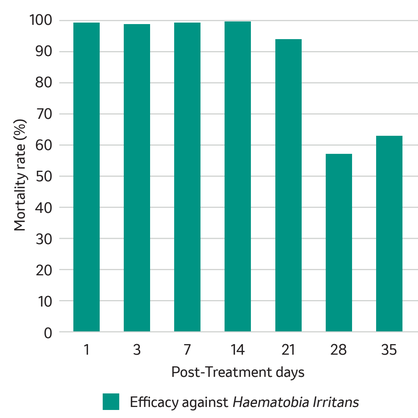
FIGURE 2. Efficacy of Exzolt 5% against an experimental *R. microplus* infestation.



RESULTS

Against *Haematobia irritans*, Exzolt 5% showed therapeutic efficacy (≥ 90%) within the first day of treatment at both study sites, while persistent efficacy (≥ 90%) was observed for 7 DPT at one site and for 21 DPT at the other site. **(Fig. 3)**

FIGURE 3. Therapeutic efficacy of Exzolt 5% against *H. irritans.*

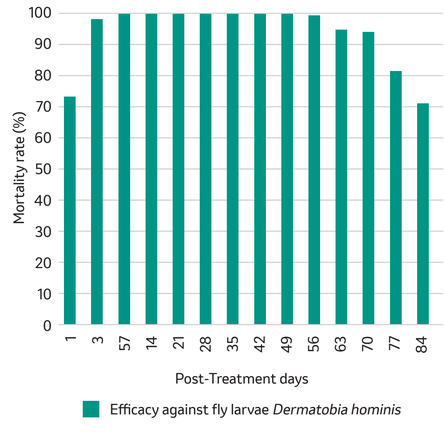


RESULTS

Efficacy of Exzolt® 5% was also assessed against *Cochliomyia hominivorax*-induced myiasis in four study sites, to assess both the preventative efficacy against myiasis (two sites) and the curative efficacy in established myiasis (two other sites). Results showed that the product prevented *C. hominivorax* eggs developing to the larval stage thus mitigating the development of myiasis in artificially created wounds for 7 and 14 DPT. No active *C. hominivorax* larvae were observed by 3 DPT in animals with pre-existing myiasis.

Additionally, efficacy of Exzolt 5% was assessed against *Dermatobia hominis*. Efficacy of Exzolt 5% against *D. hominis* larvae was 98% at 3 DPT, while persistent efficacy (> 90% effectiveness) was found to last for up to 70 DPT. **(Fig. 4)**

FIGURE 4. Therapeutic efficacy of Exzolt 5% against larvae of *Dermatobia hominis*



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