RESUMO SIMPLES - ECTOPARASITOS: SISTEMÁTICA, EPIDEMIOLOGIA E CONTROLE

IN VITRO EFFICACY OF FLURALANER ON IMMATURE FORMS OF HAEMATOBIA IRRITANS

Fernanda Ferreira Salgueiro (fernandasalgueirovet@gmail.com)

Thaíne Lopes Bueno (thaine.lopes.b@gmail.com)

Laritssa Andrade Pinheiro Magalhães (vetlaritssamagalhaes@hotmail.com)

Hugo Rocha Sabença Dias (hugosabenca@gmail.com)

Thaís Ribeiro Correia Azevedo (thaisrca@gmail.com)

Gabriela Ferreira De Oliveira (gabi.ufrrj@gmail.com)

Fabio Scott (scott.fabio@gmail.com)

Cattle play a fundamental role in the global economy and food security, providing food, industrial products, and by-products, in addition to driving job creation. Brazil has the largest commercial cattle herd in the world, leading beef exports and ranking among the main milk-producing countries. Nevertheless, the sector faces constant challenges, especially regarding disease control and the increasing resistance of parasites to drugs. Among these parasites, Haematobia irritans, the horn fly, stands out for its significant impact on Brazilian livestock production. Infestations directly affect animal welfare and performance, as cattle expend more energy on defensive behaviors, reducing the time devoted to feeding and resting. Consequently, production, feed efficiency, and milk yield decrease, with daily losses reaching up to 520 mL of

milk and 28 g of body weight per animal. Traditionally, H. irritans control relies on the use of chemical insecticides. However, the repeated use of these molecules has favored the development of resistance in fly populations. In this context, Fluralaner, belonging to the isoxazoline class, emerges as a promising alternative. The compound acts by blocking glutamate-gated and GABA-gated chloride channels in the invertebrate nervous system, exhibiting efficacy greater than 90% and persistence of up to 70 days after treatment. In dogs, it has been demonstrated that the drug is excreted almost entirely unmetabolized in the feces following oral administration, suggesting that a similar mechanism may occur in cattle. Thus, the control of immature stages of H. irritans would take place directly within the fecal pat, the site where eggs are deposited. The present project aims to evaluate the efficacy of topical pour-on Fluralaner in controlling the immature stages of H. irritans in cattle feces, complemented by in vitro tests and determination of product persistence. The study will be conducted at the Center for Clinical Research and Technological Innovation in Veterinary Medicine – Laerte Grisi (UFRRJ) and will involve sixty cattle. Twenty animals will be used exclusively as fly donors for egg collection, whereas forty will be included in the efficacy trial. Animal selection will be based on clinical examination, with inclusion criteria consisting of the absence of chemical treatment within the previous 60 days. Animals showing clinical abnormalities or management-related issues will be excluded. To participate in the efficacy trial, cattle must present infestations exceeding 50 flies per animal and will be allocated into two groups: Control and Treated. The treated group will receive Fluralaner pour-on at a concentration of 50 mg/mL. Eggs collected from flies originating from donor cattle will be individually incubated in the feces of animals from both the control and treated groups in a climate-controlled BOD incubator on days 0, +1, +3, +7, +14, +21, and +35. The following parameters will be assessed: larval hatchability after 48 hours, pupal formation on day eight, and adult emergence on day fifteen. It is expected that topical pour-on Fluralaner will demonstrate high efficacy in controlling the immature stages of H. irritans, considering its nearly unchanged fecal excretion and the parasite’s close association with the fecal pat. The use of this drug may reduce the number of required applications, operational costs, productive losses, and selection pressure for resistance, representing an innovative and strategic alternative for integrated horn fly management.

Palavras-chave: fluralaner; efficacy; horn fly.