RESUMO SIMPLES - ECTOPARASITOS: SISTEMÁTICA, EPIDEMIOLOGIA E CONTROLE

DEVELOPMENT AND EVALUATION OF A FORMULATION OBTAINED FROM BIOPROSPECTING OF ESSENTIAL OILS AND THEIR ISOLATES FOR THE CONTROL OF THE OTODECTES CYNOTIS MITE IN NATURALLY INFESTED DOGS

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Pet owners' concern regarding their animals' health is gradually increasing. A significant portion of clinical cases in veterinary practice involves dermatological conditions, among which otitis externa stands out, often triggered by ectoparasites. The primary species affecting the canine ear canal is the mite

Otodectes cynotis. Current treatments rely on synthetic acaricides; however, essential oils have emerged as a promising therapeutic alternative. Examples include the essential oils Origanum vulgare, Thymus vulgaris, Cinnamomum spp., Syzygium aromaticum, Cymbopogon citratus, and Illicium verum. Their major constituents—carvacrol and thymol for O. vulgare, and thymol, cinnamaldehyde, eugenol, geraniol and anethole for the others—have demonstrated proven in vitro and in vivo efficacy against other mites of veterinary importance. Thus, the objectives of this project are to bioprospect the acaricidal activity of the mentioned essential oils and their major components against Otodectes cynotis, to develop a formulation containing the most effective compound based on in vitro results, and subsequently conduct an in vivo efficacy study in naturally infested dogs. The study will comply ethical regulations for animal experimentation and will only begin after approval by the Ethics Committee of the Institute of Veterinary Medicine at the Federal Rural University of Rio de Janeiro (UFRRJ). Beagle dogs from the Laboratory of Experimental Chemotherapy in Veterinary Parasitology (LQEPV) will be used. For in vitro bioprospecting, O. cynotis mites will be collected from naturally infested animals, and 20 mites from each developmental stage will be exposed to test solutions, with mortality assessed periodically to determine LC50 and LC90 values. Based on these results, an otic formulation containing the most promising essential oil or isolated compound will be developed. For the in vivo study, 20 naturally infested dogs will be assigned to treated and control groups. The formulation will be administered topically in a single dose, and animals will be re-evaluated at 7, 14, and 28 days through otoscopy and subsequent ear flushing for final mite quantification. Through this study, it is expected that a technologically innovative product will be developed as a safe and sustainable alternative for the treatment of O. cynotis infestations in dogs.

Palavras-chave: veterinary drug; phytotherapy; natural acaricide; ectoparasites.