Planta Med 2011; 77
DOI: 10.1055/s-0031-1282954

Anthelmintic activity of Cymbopogon schoenanthus and Cymbopogon martinii essential oils evaluated by four different in vitro tests

LM Katiki [1], AS Chagas [2], HR Bizzo [3], JF Ferreira [4], AF Amarante [5]

[1] Instituto de Zootecnia, Nova Odessa - SP, Brazil

[2] Embrapa Pecuária Sudeste, São Carlos- SP, Brazil

[3] Embrapa Agroindústria de Alimentos, Rio de Janeiro - RJ, Brazil

[4] USDA-ARS - Appalachian Farming Systems Research Center, Beaver - WV, USA

[5] Dep. Parasitologia, Universidade Estadual Paulista, Botucatu-SP, Brazil

Anthelmintic resistance is a worldwide matter in small ruminant industry and new compounds derived from plants are being studied to be used as an additional tool to control nematodes [1,2]. *Cymbopogon schoenanthus* Spreng. and *Cymbopogon martinii* (Roxb.) J. F. Watson (family Poaceae) essential oils were chosen to be evaluated against development stages of trichostrongylids from sheep by Egg Hatch Assay (EHA), Larval Development Assay (LDA), Larval Feeding Inhibition Assay (LFIA) and Larval Exsheathment Assay (LEA). The essential oils were analyzed by gas chromatography and mass spectrometry, and their major constituents were geraniol (55.3%) and geranial (13.3%) for *C. schoenanthus* and geraniol (81.4%) and geranyl acetate (10.1%) for *C. martinii*. In all *in vitro* tests *C. schoenanthus* oil presented the best activity against ovine trichostrongylids. LC_{50} values are presented in Table 1. Considering these results, *C. schoenanthus* essential oil was selected for further experiments to evaluate its anthelmintic activity in *in vivo* models.

Table 1: CL50 (µL/mL) and confidence limits of Cymbopogon schoenanthus and Cymbopogon martinii essential oils in egg hatch assay (EHA), larval development assay (LDA), larval exsheathment assay (LEA) and larval feeding inhibition assay (LFIA) against

	C. schoenanthus	C. martinii
EHA	0.05 (0.04-0.06)	0.15 (0.13-0.17)
LDA	0.07 (0.06-0.08)	0.18 (0.17-0.19)
LEA	27.10 (21.37-32.38)	32.02 (29.87-34.47)
LFIA	0.01 (0.01-0.02)	0.04 (0.04-0.05)

Keywords: Anthelmintic activity, essential oils, *Cymbopogon schoenanthus*, *Cymbopogon martinii*

References: 1. Molan AC, Waghorn WC, McNabb WC (2002) Vet Rec 150: 65-69.

2. Brunet S, Hoste H (2006)J Agric. Food Chem 54: 7481-7487.