

**SYNERGIC INTERACTION OF AROMATIC COMPOUNDS ANETHOL AND CARVONE  
AGAINST NEMATODE *HAEMONCHUS CONTORTUS* RESISTANT STRAIN**

*INTERAÇÃO SINÉRGICA DOS COMPOSTOS AROMÁTICOS ANETOL E CARVONA EM  
NEMATOIDE HAEMONCHUS CONTORTUS DE CEPA RESISTENTE*

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The aim of this work was to evaluate the aromatic compounds Anethole and Carvone and its synergic anthelmintic interactions against sheep gastrointestinal nematode *Haemonchus contortus* multi resistant strain. Anthelmintic resistance has been a hindrance in animal production causing economic losses and consequence of the repetitive use of those ineffective chemicals it is usual to found contamination on meat, milk and environment. New sources of anthelmintic compounds have been investigated. Plant extracts and natural compounds have demonstrated themselves as promising candidates. Eggs were collected from feces of sheep infected with *H. contortus*. A hundred eggs were exposed to solutions of Anethole and Carvone and half and half Anethole and Carvone diluted in water and solvent Tween 80 in concentrations ranging from 2.08 mg/mL to 0.007mg/mL (decreasing three fold concentrations) with six replicates using a 24 well plate to perform tests. Eggs were incubated for 24 h at 27°C and the count of eggs hatched was done using an inverted microscope. Data were analyzed by SAS Probit to estimate LC<sub>50</sub> with independent variables (dose) transformed by natural logarithm (log dose). The LC<sub>50</sub> (fiducial limits) in mg/mL of Anethole was 0.070 (0.068-0.076), Carvone was 0.085 (0.081-0.088) and the synergic interaction of Anethole+ Carvone was 0.013 (0.012-0.014), according to Table 1. Gas chromatography/mass spectrometry was performed for Anethole and Carvone and 98.14% and 99.88% were the similarity with authentic molecules, respectively.

Table 1. LC<sub>50</sub> (mg/mL) and fiducial limits of Anethole, Carvone and Anethole + Carvone (50%-50%) detected by in vitro egg hatch test of gastrointestinal sheep nematode *Haemonchus contortus* resistant strain

Aromatic compounds	LC <sub>50</sub> (fiducial limits) mg/mL
Anethole	0.070 (0.068-0.076)
Carvone	0.085 (0.081-0.088)
Anethole + Carvone	0.013 (0.012-0.014)

Keywords: essential oil, *H. contortus*, in vitro test.

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