

Chemical composition and anthelmintic activity in vitro of the essential oil of *Mentha piperita*: preliminary data.

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Abstract Content

Research towards plant compounds with activity against worm parasites has been carried out for a number of decades; however it is especially important now when drench resistance has compromised the effectiveness of present control methods. In this study we characterized the composition of *Mentha piperita* essential oil and evaluated its anthelmintic effect against developmental stages of trichostrongylids from naturally infected goats (95% *Haemonchus contortus* and 5% *Trichostrongylus* spp.) through the egg hatch and larval development assays. The major constituent of the tested substance quantified by gas chromatography was menthol (58.35%). The lowest concentration of essential oil with 100% efficacy in all *in vitro* tests against caprine trichostrongylids was 0.35%. However, the equivalent dose of menthol alone (0.4%) was not fully effective against nematode egg eclosion. The anthelmintic activity of the essential oil of *M. piperita* showed good effectiveness in previous studies but also showed the presence of toxic compounds such as pulegone which could be toxic to goats according to allometric extrapolation. Our results show that the major component in the essential oil is not the only one responsible for the antiparasitic effect of *M. piperita*. Also, our data support the idea there is a wide variation in the composition of essential oils obtained from different sources. Thus, it is important that in assessing anthelmintic activity of plant candidates, the chemical composition should be thoroughly investigated before proceeding to the *in vivo* step.

Keywords: herbal; compounds; nematode; eggs