

Czech Academy of Agricultural Sciences



Open Access Agricultural Journals

VETERINÁRNÍ MEDICÍNA
VETMED

home [page](#) [about us](#) [contact](#)

[us](#)

Table of
Contents

**VETMED
2015**

**VETMED
2014**

**VETMED
2013**

**VETMED
2012**

**VETMED
2011**

**VETMED
2010**

**VETMED
2009**

**VETMED
2008**

**VETMED
2007**

**VETMED
2006**

**VETMED
2005**

**VETMED
2004**

**VETMED
2003**

**VETMED
2002**

**VETMED
2001**

**VETMED
Home**

**Editorial
Board**

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for**

Veterinari Medicina

In vitro effects of essential oils on potential pathogens and beneficial members of the normal microbiota

Ouwehand AC, Tiihonen K, Kettunen H, Peuranen S, Schulze H, Rautonen N:

Veterinari Medicina, 55 (2010): 71-78

[[fulltext](#)]

The use of antimicrobial growth promoters has been banned in the EU. This has created an interest in alternative strategies to prevent an imbalance in the intestinal microbiota and the potential development of intestinal disorders in livestock. Essential oils (EOs) have been known to exhibit antimicrobial activity against specific microbial species and could therefore be considered one such alternative in controlling the intestinal microbial population. Under anaerobic conditions, the tested *Clostridium perfringens* strains were found to be sensitive ($P < 0.05$) to carvacrol, cinnamaldehyde, citral, limonene, thymol, particularly at the higher concentration tested (500 mg/l) and to oregano oil, rosemary oil and thyme oil. *Streptococcus epidermis* was sensitive ($P < 0.05$) to most EO's tested, also mainly at the higher concentration. The tested *Salmonella* serovars were found to be sensitive ($P < 0.05$) only to high (500 mg/l) concentrations of the tested EOs. *Escherichia coli* was sensitive ($P < 0.05$) to most of the tested EOs, also at lower concentrations (5 and 50 mg/l). *Bifidobacterium longum*, *Bifidobacterium breve* and *Lactobacillus reuteri* were less sensitive ($P < 0.05$) to most of the tested EOs, while *Bifidobacterium animalis* ssp. *lactis* and *L. fermentum* were relatively sensitive also at lower concentrations (5 and 50 mg/l), although growth reduction by EOs of these bacterial species was less than with the antimicrobial growth promoter avilamycin. With the exception of *Salmonella* and *E. coli*, all tested microbes were sensitive to avilamycin. Selected EOs seem to have the advantage of inhibiting the growth of potential pathogens while only moderately influencing beneficial members of the intestinal microbiota. This difference in sensitivity may strengthen the microbiota and contribute to improved animal health.

Keywords:

antimicrobial; *Bifidobacterium*;
Lactobacillus; *Clostridium perfringens*;
Escherichia coli; *Salmonella*

[[fulltext](#)]

© 2015 Czech Academy of Agricultural
Sciences

XHTML11 VALID

CSS VALID