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A laboratory investigation of the antimicrobial activity of a selection of western phyto medicinal tinctures

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Abstract

Introduction: Following the observed success of a herbal cocktail in controlling and eliminating acute respiratory infections in a group of approximately sixty, 1 - 3 year old equines, it was decided to test ten of the herbs individually for antibacterial activity, using in vitro methodology.

Methods: Hydroethanolic extracts of defined concentration of each of the ten herbs were sourced from a licensed supplier in the UK. Positive and negative controls were included in the study.

A quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics according to British Standard BS EN 1276:2009 was used to assess the antimicrobial activity of ten neat herbal tinctures.

Results: Bactericidal activity is described as the capability of a product to produce at least a 5 log₁₀ reduction in specified test organisms within 5 minutes when the disinfectant is tested at its intended use dilution(s). The performance of each neat herbal tincture in this study was assessed only under moderate to heavy (dirty) soiling conditions.

Commiphora molmol, *Inula helenium*, and *Thymus vulgaris* showed antimicrobial activity against all three test strains of bacteria, and over the entire dilution range (10⁻¹ to 10⁻⁷).

Baptisia tinctoria, *Echinacea pupurea*, *Marrubium vulgare*, and *Salvia officinalis*, showed maximum antimicrobial activity only to two of the three test organisms.

The tinctures of *Galium aperine* and *Glechoma hederacea* showed zero to very low antimicrobial activity against the three test organisms.

Conclusion: A herbal formulation containing a blend of the ten tested herbs constitutes a powerful antimicrobial cocktail.

List of Abbreviations:

AIT: Athlone Institute of Technology

CAM: Complementary & Alternative Medicine

ESCOPE: European Society Co-operative on Phytotherapy

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