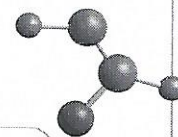




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EFFICACY OF TOPICAL APPLICATION OF MICROENCAPSULATED ESSENTIAL OILS ON ANIMAL MYCOSIS AND MANGE

Poster presentation

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The purpose of the experiments reported in this paper is the evaluation of two formulations based on essential oils that are active against the skin disease mange. This disorder is caused by mites of Fam. *Psoroptidae*. Furthermore, the beneficial effect of the essential oils on infections by dermatophytes (fungi of genus *Microsporium*, *Trichophyton* and *Epidermophyton*) and parasites of animals and humans was investigated.

Some of the currently known active principles against these diseases are certainly effective, but they have a more or less pronounced toxicity to humans and animals and cause possible side effects. In addition, in both kinds of infections, the treatments available today require repeated administration, particularly with regard to the fungal infections, for which several weeks of topical therapy are required to achieve a complete healing.

The aim of this study is to formulate compounds with natural substances without toxicity for both animals and humans. Furthermore the use of microencapsulated essential oils is expected to result in a more rapid clinical resolution of the symptoms. The treatment goal is to use a single topical administration, possibly in combination with environmental treatments.

Previously, several essential oils have been tested in the laboratory of the Section of Parasitology, Faculty of Veterinary Medicine – Perugia (Italy). The active essential oils have been used in both liquid and microencapsulated form for the construction of compounds for topical and environmental treatment.

For each formulation a combination of essential oils was used, to explore their synergistic effect. In particular, *Mentha piperita* and *Thymus vulgaris* were used for the acaricide compounds and *Melaleuca alternifolia* and *Thuya occidentalis* for their antifungal compounds. Both compounds were tested for two different liquid formulations (one to be used directly on animals with a topical treatment and the other one for environmental treatment by spraying) and one formulation in solid form to be used both topically and within nests and cages, whose active principle was present only in the microencapsulated form with talcum powder as the excipient.

All liquid and solid preparations, gave very good results. Treatments with the liquid form for topical use were successful in 100% of the animals treated. In particular the acaricide compounds were highly effective. Clinical recovery occurred in all mares with fungal telite when treated with the antifungal compounds. Only in some obese young subjects relapses occurred before previous lesions had healed completely.

All formulations are characterized by the presence of the active principles in the form of microencapsulated essential oils which slowly and gradually release the active substances. This leads to a release of the symptoms through the administration of a single clinical dose.

Moreover, even though these formulations were tested on rabbits they have also shown their effectiveness after a single topical application on other animal species.