

**E2 246**

**Antifungal properties of essential oils of cinnamon (*Cinnamomum zeylanicum*) against dermatophytes**

Skin diseases caused by dermatophytes are common in Sri Lanka. *Tricophyton mentagrophytes*, *Tricophyton rubrum*, *Microsporum gyseum* and *Microsporum canis* are the major dermatophytic species found through clinical studies. The objective of this study was to evaluate the antidermatophytic properties of cinnamon essential oils.

Essential oils of bark and leaf were tested against human isolates of *T. mentagrophytes*, *T. rubrum*, *M. gypseum* and *M. canis*. Bioassay followed the agar-well diffusion assay and 70% ethanol was used as a control. Liquid dilution method was used to determine the Minimal Inhibitory Concentration (MIC).

Cinnamon bark oil showed 100% growth inhibition at 0.5% (v/v) concentration against all species tested. Leaf oil showed 100% activity at much higher concentration than bark oil, i.e. at 2.4% (v/V) concentration. The MIC of bark oil ranged between 0.4-0.9% and that of leaf oil ranged between 0.4-0.1% concentrations against all species tested. Gas Liquid Chromatographic analysis using a Supelcowax TM 10 Capillary column showed that eugenol is the major component of leaf oil and cinnamaldehyde in the bark oil. The standard compounds of cinnamaldehyde and eugenol also showed 100% growth inhibition at 0.5% and 2.4% (v/v), concentrations, respectively, against the dermatophytes tested. The MIC of eugenol cinnamaldehyde are also comparable to those of leaf and bark oils.

This study indicates that both cinnamon bark and leaf oils have potential lethal properties against the dermatophytes tested and could be used as promising ingredients in fungicidal preparations.