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Effect of essential oils from Cinnamomum zeylanicum Blume and Syzygium aromaticum (L) Meer et L.M. Perry on storage life of banana and identification of antifungal constituents in these essential oils.

Natural aroma volatile compounds from *Cinnamomum zeylanicum* Blume and *Syzygium aromaticum* (L) Meer et L.M. Perry inhibited the growth of *Fusarium proliferatum* and *Colletotrichum musae*, two major pathogens causing postharvest disease in banana and reducing shelf life. Benzimidazole fungicides such as benomyl are currently used to control these fungal pathogens. Due to the awareness of undesirable effect of pesticides on health there is a strong consumer demand for more natural foods or foods with fewer added chemicals. The modified atmospheric conditions have been extensively used to extend the shelf life of tropical and sub tropical fruits at ambient temperature. Banana treated with cinnamon leaf (2.3 mg/mL), bark (1.6 mg/mL) or clove (2.1 mg/mL) oils and stored in modified atmospheric packaging showed low disease severity compared to the control and increased storage life upto two weeks. There was no difference in certain physico-chemical properties such as malic acid, total soluble solids (TSS), fruit firmness and pH between treated banana and controls during ripening.

Antifungal constituents of cinnamon bark, leaf and clove oils against the growth of *C. musae* and *F. proliferatum* were identified using Thin Layer Chromatography and Gas Chromatography as eugenol, eugenyl acetate, cinnamaldehyde, α-terpineole, camphene, 1,8 cineole, cinnamyl acetate, myrcene, β- caryophyllene, terpinene-4-ol, cinnamyl alcohol, acetyl eugenol and α-humulene.