

III.I.O22. Effect of *Ocimum basilicum* oil plus modified atmosphere packaging on quality of Embul banana

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Effect of *Ocimum basilicum* (basil) oil spray treatment in combination with modified atmosphere packaging (MAP) was investigated in extending the shelf life of Embul banana (*Musa acuminata*, AAB) at 12-14°C. Embul banana fruits were treated with 1% (w/v) alum (sodium aluminium sulphate), 1% (w/v) alum + 0.2% (v/v) basil oil, 1% (w/v) alum + 0.4% (v/v) basil oil, 0.5 g/L carbendazim or distilled water. Treated banana samples were packed in Low Density Polyethylene bags and stored at 12-14°C. In-package gases were analysed on initial day and every seven days thereafter up to 28 days of storage. Physicochemical properties (pH, firmness, TSS, TA), sensory properties (peel colour, flesh colour, aroma, flavour, taste, overall acceptability) and crown rot disease severity were determined in ripened fruits after each storage period. According to the results of in-package gas analysis, oxygen (O₂) and carbon dioxide (CO₂) attained steady state conditions after 21 days in all packages containing banana samples. At the end of 28 days of storage O₂ in all packages remained between 2.7-4.0% while CO₂ varied from 3.9 to 4.3%. Further, 1% alum+0.40% basil oil was the most effective treatment in controlling crown rot disease completely up to 28 days. Physicochemical and sensory properties of alum+0.4% basil oil treated banana were not significantly different from the control. Gas chromatography data obtained during residue analysis of basil oil treated banana indicated that insignificant amounts of basil oil residues remained on fruit after the storage period.

Keywords: crown rot disease, in-package gases, physicochemical, sensory, shelf life