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***Aloe vera* gel and cinnamon essential oils-incorporated *Aloe vera* on stem-end rot control of mango (cv. Karthakolomban) using dip treatment**

N. S. N. Karunaratna and K. Abeywickrama*

Department of Plant and Molecular Biology, Faculty of Science, University of Kelaniya, Sri Lanka
kris@kln.ac.lk*

Stem-end rot (SER) is a major post-harvest disease of mango worldwide. Naturally occurring biologically active compounds from plants are expected to be more suitable and less harmful than synthetic fungicides. Current research was carried out to investigate the applicability of *Aloe vera* gel and cinnamon bark oil and cinnamon leaf oil-incorporated *Aloe vera* gel in controlling SER and extending post-harvest shelf life of mango (cv. Karthakolomban). Dip treatments of *A. vera* gel and cinnamon bark oil (2.0 µL/mL) and cinnamon leaf oil (2.0 µL/mL) incorporated *A. vera* gel were carried out for 90-day old mango fruits and their pathological, physicochemical, sensory properties and percentage shriveling were evaluated after 10-day storage at 12-14 °C. After the initial dip treatment trial, a scaling up experiment was conducted using the best treatments where treated and control mangoes were placed in ventilated corrugated fiberboard boxes instead of plastic trays to store mango at 12-14 °C. Statistical analysis of the results was carried out using MINTAB 18 statistical software. Data with respect to physicochemical properties were analyzed using One-way ANOVA and Tukey's multiple comparison test. Kruskal Wallis non-parametric test was used to analyze data with respect to pathological, shriveling and sensory properties. Dip treatments of *Aloe vera* gel in combination with cinnamon leaf and bark oils reduced SER severity of mango to 3.0% in both trials once fruits were subjected to induce ripening. *A. vera* gel treatment reduced SER severity of mango to 6.0%. *A. vera* gel, cinnamon bark and leaf oil-incorporated *A. vera* gel treatments significantly reduced SER severity of mango in comparison to the negative control (distilled water) which showed SER severity of 19.0%. Physicochemical properties namely total soluble solids, titratable acidity, pH, firmness and weight loss of *A. vera* gel and gel plus oil treated mangoes were similar to the negative control fruits according to the statistical analysis. Percentage shriveling of mango subjected to *A. vera* gel treatments was reduced to 0-0.4% compared to the uncoated control fruits which indicated a shriveling of 1.6%. Sensory properties of mango did not demonstrate any drastic alteration between all treatments. Current ecofriendly treatment strategies could be introduced to horticulture industry to reduce post-harvest loss of mango in local trade, during transportation and exportation via air cargo within 10 days.

Keywords: *Aloe vera*, Dip treatment, Essential oils, Mango, Stem-end rot

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