# Effect of cashew *(Anacardium occidentale)* and *ehala (Cassia fistula)* fresh leaf powders on induction of ripening in banana variety *Embul*

[1]Herath HMWSK, [2]Champa WAH, [1]Nayananjali WAD and [1]Lakmini GWAS

[1] *Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka;* [2] *Institute of Postharvest Technology, Jayanthi Mawatha, Anuradhapura, Sri Lanka*

Corresponding author: harindra74@gmail.com

Artificial ripening is an important part in fresh fruit trade and different ripening agents are used to accelerate the ripening process. These include chemical based industrial byproducts such asethrel or ethephon (2-chloroethyl phosphonic acid) and less frequently calcium carbide. However, induction of fruit ripening by chemical means may pose high risk on consumer health. Traditionally, biomaterials such as *cashew* (*Anacardium occidentale*) and *ehala* (*Cassia fistiula*) have been used to stimulate the ripening process. Therefore, a study was conducted to identify potential of utilizing these biomaterials to induce fruit ripening with an ultimate objective of developing a sustainable product. As an initiative, effect of fresh leaf powders of cashew and ehala on ripening behavior of banana variety Embul was evaluated under laboratory scale. Fresh leaf powders of cashew and e*hala* were used as treatments in different doses *viz* 10 % cashew, 10 % *ehala*, a combination of 10 % cashew and *ehala* (1:1) and compared with an untreated control. Banana variety Embul harvested at mature green stage were de-handed, clustered and allocated into different treatments which are kept under hermetically sealed glass chambers. The physicochemical parameters such as peel colour, pulp firmness, juice pH, titratable acidity, brix, and weight loss were recorded at different intervals until table ripe stage. Sensory evaluation was conducted when the bananas at table ripe stage. Parametric data were analyzed using SAS (v 9.0) while sensory data were analyzed by Friedman test by MINITAB (v 15). It was revealed that 10 % cashew accelerated banana ripening significantly on the contrary to control and other two treatments. Bananas treated with 10 % cashew were ripened two days after treatment and showed significant difference in colour ($L^*$, $a^*$ and $b^*$), weight loss, firmness, brix and tritratable acidity, while weight loss was not significantly different. According to sensory evaluation, there was a significant difference ($P < 0.05$) in colour, texture, odour and overall acceptability of bananas treated with 10 % cashew, while there was no significant difference in taste. In conclusion, leaf powder of cashew at the dose of 10 % accelerated ripening of banana variety *Embul* by 2 days in contrast to other two treatments and the control.

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