SHORT COMMUNICATION

Unveiling of physico-chemical changes of some underutilized fruits at different stages of maturity

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ABSTRACT

A study on physico-chemical properties of some underutilized fruits grown in Nagaland was conducted in School of Agricultural Sciences, Nagaland University in 2023 to evaluate the morphological and biochemical changes from fruit set to maturity. Three different locations furnished the fruits for study of Averrhoea carambola, Eleagnus latifolia, and Phyllanthus acidus. Averrhoa carambola fruit had the diameter of 5.0 ±0.62 cm, 8.47 ± 0.81 cm in length and 68.69 ±15.41g in weight at 75 days after fruit set (DAFS). There was a discernible biochemical synthesis trend in Averrhoa carambola fruit in TSS (5.27±0.64 ^{0}Brix to 6.77±0.36 ^{0}Brix), total sugar (6.10±0.33 to 7.96±0.09%) and vit-C (12.64±7.20 to 22.68±10.04 mg/100 g pulp) from 15 DAFS to 75 DAFS, respectively. The significant variation of Eleagnus latifolia were found in fruit weight (3.70 ± 0.62 to 11.27 ± 0.76 g), fruit length (2.80 ± 0.36 to 3.77 ± 0.48 cm) and fruit diameter (1.59 ±0.20 to 2.40 ±0.0.09 cm) from 15 days after fruit set to 75 DAFS respectively. A progression of biochemical synthesis in the fruit of Eleagnus latifolia was noticed in TSS (5.70±0.46 ^{0}Brix to 9.87±0.52 ^{0}Brix), total sugar (4.39±0.04% to 6.59±0.36%) and vit-C (14.08±1.32 to 9.19±0.99 mg/100 g pulp) from 15 DAFS to 75 DAFS. Phyllanthus acidus showed a fruit weight of 4.67 ±0.74g, length of 1.60 ± 0.01 cm and diameter of 2.22 ±0.03 cm at 60 DAFS. The biochemical composition of Phyllanthus acidus was noticed in TSS (6.40±0.57 ^{0}Brix), total sugar (5.87±0.26%), and Vit-C (22.20±1.22 mg/100 g pulp) at 60 DAFS.

Keywords: Morphology, physico-chemical properties, underutilized fruits