

# Correlation between colour, firmness, dry matter, sugars and maturity in 'East Indian' mangoes (*Mangifera indica*)

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## Abstract

There are about twenty-five (25) different types of mangoes in Jamaica, but most consumers are unable to identify the cultivars. The 'East Indian' mango is one of the most popular cultivars because of its fruit quality. Although much is known on mango physiology, little is known on these cultivars. This study aimed to determine the correlation in the skin colour, firmness, dry matter, sugar contents and maturity indices of the 'East Indian' mango cultivar. Results showed that the L\*, a\*, b\*, c\* values of the fruit increased significantly during the ripening of the fruit. The L\* values ranged from 48.72±1.92 to 62.44±2.11. The b\*, c\* and a\* measurements showed similar trends; ranging from 32.13±2.36 to 47.57±6.91, 36.52±2.49 to 49.02±7.48 and -17.36±0.99 to 10.75±5.91 respectively. The hue angle (H\*) showed a significant decrease during maturity; ranging from 118.42±0.92 to 77.97±6.62. Sugar contents increased significantly during maturation. Reducing sugars in skin increased steadily from 17.57±0.32 mg/g in stage 1 to 35.34±5.35 mg/g in stage 4. However, reducing sugars in pulp increased significantly from 21.99±3.42 mg/g in stage 1 to 58.07±2.14 mg/g in stage 4. The total sugars in skin increased significantly between each stage; ranging from 27.88±1.55 mg/g in stage 1 to 80.89±12.77 mg/g in stage 4. However, total sugars increased significantly from 26.85±3.43 mg/g in stage 1 to 68.43±10.76 mg/g in stage 2. The concentration increased steadily to 74.31±5.38 mg/g in stage 4. Firmness decreased significantly by 60% during maturation. Dry matter did not vary significantly with final % dry matters of 34 and 24% for peel and pulp respectively. A strong correlation was found between the skin colour, dry matter, firmness and sugar content of the fruit during maturation and ripening. Therefore, these are good indicators for determining the optimal maturity stage of the 'East Indian' mango fruit.