

## B-40 Evaluation of Carambola (*Averrhoa carambola* L.) varieties in Sri Lanka

I Medagoda, Thilakarathna, T M K Tennakoon

Horticultural Crop Research & Development Institute, Gannoruwa, Peradeniya

Starfruit (*Averrhoa carambola* L.) belongs to the Family Oxalidaceae. In 1984 and 1993 a number of cultivars were introduced to Sri Lanka from Malaysia, Australia and USA to determine the adaptability to identify the cultivars with the best combination of fruit quality and productivity.

The cultivars used were: Arkin, Maha, Fwungtung, B-17 or honey sweet (2 accessions), B-10 (2 accessions), 9-4, B-2, 11-1, Kembangan and the local selection. These 12 cultivars were grafted onto local carambola seedlings and planted with 4 replications in Randomized Complete Block Design.

Differences were observed in the panicle position, flower colour, length of the style and fruit character. During the flowering period, most of the branches of exotic cultivars end with a panicle, except the local variety. Two different petal colours were observed. Pink colour was observed in cultivars B-10 and 9-4 and the rest were light pink. According to the length of the style, cultivars can be divided into 2 groups, long style and short style. In short style flowers (B-10, Kem, B-17, 11-1, B-2, Fwungtung, 9-4) the stigma is located below the stamen and this is generally self incompatible. The number of flowers per panicle and flowering duration were high in B-10 cultivars. As a result the fruit setting too is high in B-10. Because of the longer flowering duration (27 days) mature and immature fruits can be seen at the same cluster at the same time. Carambola fruit development takes about 3 months from fruit set and are harvested twice a year in July - Sept. and December - Feb.

The variety B-17 has the highest fruit weight (160 g), circumference (19.5cm), the highest length of fruit (11.75cm) and the lowest number of seeds per fruit. It has also an attractive yellowish orange skin colour. Among these varieties B-17, B-10 and Fwungtung gave high brix levels (8 - 9). Moisture percentage and extractable juice content is almost similar in all the varieties (80-90% and 65-70% respectively). The local variety is very acidic when compared to introductions. Acidity (as citric acid) in the local cultivar is 0.1% where it is 0.1% in introductions.

Carambola trees start to bear within one year after planting and generally a tree will produce 4 to 6 crops a year ranging from 50 - 115 fruits per tree during the first year. Major pests and diseases observed were fruit borer, pinkish caterpillar and *Anthraco* damage.

The exotic carambola cultivars B-17, B-10 and Fwungtung are superior than the others in quality and yield.