## Maturity indices for harvesting of bitter gourd (*Mormordica charantia*) var: MC 43

W A H Champa*, M D Fernando and K B Palipane

*Institute of Post Harvest Technology, Research and Development Center, Jayanthi Mawatha, Anuradhapura*

A study was conducted to develop subjective and objective maturity indices to identify the best stage of maturity for harvesting of bitter gourd variety MC 43 and its effect on quantity and quality of the harvest and shelf life.

Four different harvesting stages were tested namely, 18, 16, 14 and 12 days after fruit set (DAFS). Number of pods, length, diameter, fresh weight, dry matter content of the pod and pod firmness were measured at each harvest. Harvested pods were then kept in plastic crates and stored at ambient conditions (30 ±2 $^0$C and 80% relative humidity) and they were examined for quality parameters such as, percentage weight loss, visual quality rating (VQR), discoloration and turgidity. Sensory evaluation was conducted to test organoleptic properties.

The mean pod length increased significantly from 12 to 14 DAFS. Beyond 14 days no significant variation in pod length was observed. There was a significant increase in the pod diameter up to 16 DAFS. The mean pod weight reached a maximum at 16 DAFS and then started to decrease up to the 18$^{th}$ day. The average yield per hectare reached a maximum on the 14$^{th}$ DAFS and then started to decrease. The high yield obtained at 14 days is due to initiation of more flowers and hence, more pods than when harvested at 16 and 18 DAFS. The mean scores analyzed by Kruskal–Wallis test showed that pods harvested at 14 and 12 DAFS gave the highest values for VQR, discolouration and shriveling while 18 and 16 DAFS gave the lowest values. Stage of harvesting had no effect on weight loss and dry matter content. However, delay in harvesting after 12 DAFS significantly decreased the pod firmness.

Results revealed that harvesting of bitter gourd variety, MC 43 at 14 DAFS had a significant influence on yield and keeping quality of pods, minimizing post harvest losses and increasing yield. At this stage pods were whitish cream in colour with an average pod length, diameter and weight of 22 cm, 3.8 cm, 108 – 110 g respectively. The yield obtained at this stage was about 28000 kg per hectare.

*harindra74@hotmail.com Tel: 025 2222344