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**HARVESTING MATURITY AND POSTHARVEST
FUNGAL DISEASES IN RIDGED GOURD (*Luffa acutangula*)
var. INDIAN 19**

A project report presented by

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**MASTER OF SCIENCE IN POSTHARVEST TECHNOLOGY OF
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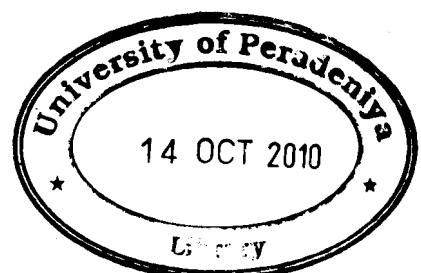
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ABSTRACT

The aim of this study was to test the effect of harvesting maturity on post harvest fungal disease development and structural and physico-chemical aspects in ridged gourd (*Luffa acutangula*) var. Indian 19. Three different harvesting maturity stages were used for the study; 9, 11 and 13 days after fruit set (DAFS). *Fusarium* sp. was found to be the most common postharvest fungal pathogen and Yeast and *Rhizopus* sp. were the other two fungi, which caused postharvest rots during the storage period.

There was a significant increase in fruit growth in terms of pod length, weight and diameter with the advancement of harvesting maturity. Pod firmness and total soluble solids (TSS) content also were seen to increase with the increase in harvesting maturity and duration of storage period.

Inoculation onto wounded fruits indicated that more mature pods were more susceptible to *Fusarium* infection than that of less mature pods. With healthy pods, a significant negative relationship was found between the pod pH and harvesting maturity. However, there was no significant difference between pH and harvesting maturity of diseased pods. The highest fresh weight loss was observed with 11 DAFS pods irrespective of the *Fusarium* infection. However, diseased pods exhibited significantly higher weight loss than healthy pods.

With regard to the cuticle of the pods, a significantly higher thickness was found in the 'valley' areas than the 'ridge' areas. Cuticle thickness did not change significantly with increase in harvesting maturity and it does not appear to have a role in the degree of disease development. Lignification of the tissues in outer pericarpal region also increased to insignificant levels with increasing harvesting maturity of pods, where it does not appear to have a role in the disease incident.

Antifungal activity of extracts of outer pericarpal region of healthy pods decreased with the advancement of harvesting maturity. This may have at least partly contributed for higher chances of *Fusarium* infection with increased harvesting maturity of pods.