EFFECT OF TRANSPORT PRACTICES ON POSTHARVEST DISORDERS AND DISEASES OF CASSAVA

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ABSTRACT

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Cassava (*Manihot esculenta*) is an extremely perishable root crop. It develops spoilage within 24- 48 h of harvest, if left without proper storage. Spoilage of cassava is attributed to physiological and pathological reasons and also due to mechanical injuries resulting from improper postharvest handling practices, harvesting, transportation and storing.

Various storage methods of cassava locally practiced by farmers, in clamp, storage in soil, and in moist saw dust are etc, are low in efficiency and not sophisticated to use commercially. Fresh cassava root for exports, are coated with paraffin, dipped in fungicidal wax, kept in cold storage or under freezing conditions. However, the high cost and many issues related to fungicide application severely limit the use of these techniques.

Identification of a suitable package to store of fresh cassava would increase the shelf life and will help to lower the postharvest losses and subsequently increase the utilization of cassava. Therefore, this study was carried out to find out the effect of postharvest handling practices on occurrence of postharvest diseases and to find out

effect the of GRAS (Generally Recognize As Safe) compounds to control postharvest diseases.

Cassava was transported from a cassava field at Mawanella area, 35 km away from Peradeniya, with using two transport packages, plastic crates and poly sac bags. The samples were stored at ambient temperature for seven days at Food Research Unit Gannoruwa and damaged roots, weight loss, vascular streaking and disease index were recorded. *In vitro* test was done by using 1 % $(NH_4)_2CO_3$, 2% $(NH_4)_2CO_3$,3% $(NH_4)_2CO_3$, 1% Citric acid, 2% Citric acid, 3% Citric acid 100ppm Chlorine, 200ppm Chlorine, 300ppm Chlorine treatments and control for *Fusarium spp*. The radial growth of the fungus was measured. *In vivo* test was done by using three varieties of freshly harvested cassava MU 51, CARI 555 and KIRIKAVADI. They were inoculated with *Fusarium spp*, and treated with 4 % (w/v) $(NH_4)_2CO_3$. Diseases severity was recorded after seven days of storage at ambient temperature.
According to results 4 % (w/v) $(NH_4)_2CO_3$ (GRAS compounds) significantly suppressed the *Fusarium* growth in *in vitro* treatments. There was no significant effect of 4 % (w/v) $(NH_4)_2CO_3$ in controlling the fungal pathogen in *in vivo* treatments.

The cassava transported using plastic crates were shown less damages to the tubers and significantly lowered the weight loss and susceptibility to the disease infections during storage.