EFFECTS OF DIFFERENT POSTHARVEST TREATMENTS AND PACKING MATERIALS ON THE QUALITY AND SHELF LIFE OF CARROTS (*Daucus carota* var *sativus*).

A PROJECT REPORT PRESENTED

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ABSTRACT

The identified main causes of postharvest losses and deterioration of carrots(type Chanteny) are moisture loss, phenolic browning, foliage detachment, and bacterial soft rot. Simple and cost effective postharvest treatments are necessary to reduce the losses. Therefore, combinations of following 16 postharvest treatments and packing materials were tested in this study.

Post harvest treatments

1) Washing carrots before transportation to sale points.
2) Washing carrots after transportation to sale points.
3) Brushing carrots after transportation to sale points
4) Washing carrots in chlorinated water after transportation to sale points.

Packing materials

1) Un-perforated polyethylene bags
2) Perforated polyethylene bags
3) Kraft paper bags with an observation area
4) Unpacked carrots

Observations were made on weight loss, moisture content, firmness, total soluble solids, disease incidence, and visual quality ratings. A consumer sensory evaluation was done to obtain the consumer preference.

After 6 days of storage except the unpacked carrots, all other treatments resulted in a similar quality in carrots. There after, rapid deterioration was observed in carrots packed in un-perforated poly bags. Among the treatments, carrots that were washed before transportation, showed the highest weight loss regardless of the packing material. Although brushed carrots were acceptable in moisture content, internal color, crispness, flavour and firmness, consumer rejection was observed due to their dull color. Disease incidence was high in brushed and packed carrots especially in un-perforated poly bags. No difference was observed between carrots, which were washed after transportation and washed in chlorinated water after transportation. The effects of perforated poly bags

and Kraft paper bags on quality and shelf life of carrots was more or less similar through out the study. However, finally perforated poly bags were selected as the best option due to their transparency, firmness and low cost. The treatment combinations both carrots washed after transportation and packed in perforated poly bags and carrots washed in chlorinated water and packed in perforated poly bags were identified as the best to store carrots for 18 days at 19-22^{O}C and 85-90% relative humidity.