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An attempt to control soft rot of carrots by agrochemical free postharvest treatments

Controlling Bacterial Soft Rot (Erwinia carotovora) in carrots (Daucus carota) stored at 28± 2C° was tried out by using hot-water dips and chlorination, combined with methods of packaging. Healthy carrots were inoculated with pathogen, maintained on Logans Differential Medium. A Sodium Hypochlorite (5.25% NaOCL) solution was diluted to active chlorine levels (in ppm) of 50,100,150 and 200. Batches of tubers (n=30) were dipped in respective solutions (5min) Complete and partial disease control were observed at concentraions of 200 and 150 ppm levels respectively.

In a factorial design (n=60), the combined effect of hot-water immersion followed by chlorinaion was determined. The factors were hot-water 950ø C,1min.) and chlorination (at 150 and 200 ppm respectively). Although hot -water treatment followed by chlorination (at 150 and 200 ppm respectively). Although hot-water treatment followed by chlorination at 150 ppm inhibited the disease, this was not statistically significant. The 100 and 150ppm chlorinated carrots were packed in three different packaging methods; sealed in perforated polythene (150 gauge) bags (I), wrapped with bakery papre (II), combination of and II Experiment setup was caged fractional factorial design (n=48) where 3 chlorine levels (0,100,150ppm) were caged within 3 packaging methods.

There was a significant weight loss in carrots which were not packed (68-78%)compared to those packed in perforated polythene bags(14-20%), although the disease development was completely inhibited. To control both weigh loss and lesion development, perforated polythene in combination with 150 ppm chlorination can be recommended.