Abstract

Nowadays, the use of essential oils instead of fungicides to control citrus fruit rot, because of safety and compatible with the environment, is taken into consideration.This study was set out to investigate (concentrations of Linalool and Octanool (0, 50 and 100 ppm) and Benomyl (0 and 400 ppm) on the *Penicillium Italicum* and *penicillium digitatum* and also on the quantitative and qualitative properties and shelf life of Thamson Navel orange during 24 days of storage. The experiments were performed in vitro and in vivo conditions. Every six days, decay percent, loss in weight, pH, titrable acidity, total soluble solids, maturity index, vitamin c and qualitative properties were studied. Our results indicated that all treatments inhibited the growth (colony diameter) of both pathogens. In between treatments; the inhibitoriest effect was related to treatment containing Benomyl 400 ppm. all treatments, under vivo conditions, influenced decay percent, preserving acidity; however,the most effective was related to treatment with contain Benomyl 400 ppm, Linalool 400 ppm and Octanool 100 ppm (p<0/05). Also the use of a combination of Linalool, Octanool and Benomil at the highest level (Benomyl 400 ppm), (Linalool 100 ppm) and (Octanool 100 ppm) by preventing decay, preserved the organoleptic properties (stiffness, appearance, aroma and overall acceptability) of orange fruit. The use of Linalool and Octanool compared to benomyl, while reducing losses due to the loss in weight, lead to retain more vitamin C (*p<0/05).*

Keywords: Orange, Essential oil, shelf life, *Penicillum italicum*, *Penicillum digitatum*

University of Zabol

Graduate school

Faculty of Agriculture

Department of Food Science and Technology

The Thesis Submitted for the Degree of M.Sc (Food Technology**)**

Effect of orange essential oil compounds (Linalool, Octanool) on the quantity, quantity properties and shelf life of Thamson Navel orange

Supervisor:

Dr. M. A. Najafi

Advisor:

M.Y. Poormir

By:

H. Kordi

October 2016