**The responses of postharvest quality characteristics of Washington Navel orange to extract and agar from seaweeds**

Farzin Abdollahi1 and Mahbobeh Rezaei2

1. Assistant Professor of Horticultural Department, Faculty of Agriculture and Natural Resource, Hormozgan University, Bandar abbas, Iran.
2. MSc Student of Horticultural Department, Faculty of Agriculture and Natural Resource, Hormozgan University, Bandar abbas, Iran.

In recent years the use of natural compounds is common to increase the storage life and postharvest quality of fruits. This study was conducted on Washington Navel orange fruits during 2015 and 2016 in Hormozgan Universirt, Bandar abbas, Iran, to evaluate the effects of different concentrations of extract and agar from two seaweeds (endemic of Persian Gulf), *Ulva flexuosa* and *Gracilariopsis persica*, essential oil from *Zataria moltiflora* (Shirazi thyme) on postharvest quality and storability of Washington Navel fruits under cold storage 5±1°C at 85-90% RH for 60 days of storage conditions (the postharvest characteristics were evaluated four times with 15 days interval). Obtained results indicated that fruit weight loss %, fruit decay%, juice%, TSS (Total Soluble Solids) content and TSS/acid ratio increased as storage period prolonging. On the other hand, postharvest quality of Washington Navel fruits significantly improved when fruits were immersed in seaweed extract and agar. The most effective treatment in maintaining quality characteristics of Washington Navel fruits during cold storage for 60 days was 0.94 gr *Ulva flexuosa* extract per liter, so that this treatment could improve antioxidants capacity, ascorbate peroxidase activity and TSS. After 60 days, maximum vitamin c was obtained with orange fruit immersion for about 5 minutes in Shirazi thyme essential oil. As well as, treating Washington Navel fruits by immersing it in *Gracilariopsis persica* agar at 5 gr per liter was maintained fruit quality longer time comparing to control treatments. Over all these results indicated that the seaweed extract and agar can use as a bioactive agents for increasing the postharvest quality of orang fruits.