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Effect of different pre-treatments on physico-chemical parameters of raisins prepared from variety Thompson Seedless

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ABSTRACT

The present investigation was carried out at the Post Graduate Laboratory of the Department of Horticulture, Junagadh Agricultural University, Junagadh during the year 2008. The experiment consisted of 3 levels of olive oil concentrations *viz.*, 0.5%, 0.1%, and 1.5% and 3 levels of potassium carbonate concentrations *viz.*, 2.0%, 4.0%, and 6.0% and control, there were 10 treatment combinations employed in this study. Fully ripened, fresh, healthy, uniform size, shape and colour berries of Thompson seedless variety were taken for experiment. The berries treated with different treatments for 3 minutes at 42^0C and treated berries were subjected to shade drying for 8-17 days. The dehydrated grape raisins were packed in polythene bags and kept at ambient conditions. The experiment was laid out in Completely Randomized Design with three replications. The dehydrated grape raisins samples were analyzed for various physical, biochemical and organoleptic changes. The results of the study indicated that, the combination of olive oil concentrations and potassium carbonate concentrations affect the quantitative and qualitative characteristics during the storage period. The treatment combination of olive oil 0.5% and potassium carbonate 4% concentrations, recorded the highest TSS, sugars, ascorbic acid and organoleptic score during the entire storage period. The chemical parameters *viz.*, TSS, reducing sugar, total sugar content were increased with advancement and titrable acidity decreased during storage period. The organoleptic rating with regard to colour, texture, flavour, and taste was also found higher in the treatment combinations of olive oil 0.5% and potassium carbonate 4%. Among different treatments, T_{10} (dipping (1.5% olive oil + 6.0 % K_2CO_3) for 3 min. at 42^0C) recorded the highest recovery % with lowest dehydration ratio. From the present investigation it is clear that, for quality production of raisins (dried grape berries) from fresh grape berries under shade drying by using treatment olive oil of 0.5% and potassium carbonate 4% would be beneficial.

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Raisin is one of the important processed products obtained from grapes. The word raisin has been taken from French word 'Raisin gel' meaning dry grapes (Amba Dan, 1985). As raisins are prepared by drying of grapes, they contain most of the vitamins, minerals and other nutrients present in the original fruit (Winkler, 1962). The quality of raisins is determined by physico-chemical characteristics of grape berries and the method of their preparation (Chavan *et al*., 1992). The cold dip method is easy and economical and mostly used in Australia. The sulphur bleach, golden bleach, soda dip, hot dip, etc. methods are used for raisin preparation. The acid preyal dip method before sulphuring is used to provide a product of better quality stability.

MATERIALS AND METHODS

The present experiment on was conducted during 15th April-15th September 2008-09 in the post graduate laboratory of the Department of Horticulture, Junagadh Agricultural University, Junagadh. This laboratory experiment was carried out by using Completely Randomized Design with ten treatments with three replications of each treatment (Table 1). Ripe, fresh grapes (*Vitis vinifera* L.) cv. 'Thompson seedless' obtained at the local market in Junagadh for making raisin. Methodology shown in Fig. (a) was used for making raisins prepared from variety 'Thompson seedless' of grapes (*Vitis vinifera* L.). The samples were analyzed for moisture, TSS, sugars, titratable acidity, ascorbic acid, by methods described by Ranganna (1986).

RESULTS AND DISCUSSION

The data recorded on various physiological parameters *viz.*, weight, moisture per cent, physiological loss in weight (PLW), drying time requirement, dehydration ratio and recovery per cent of raisins prepared from grape