INFLUENCE OF CHEMICAL TREATMENT ON QUALITY OF CUT ORANGE STORED AT 4°C

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ABSTRACT

Consumers are looking for convenience and high quality in food products (Dougherty, 1990). With this increasing demand for fresh quality, processors are turning to minimally processed products including fruits which attempt to combine freshness with convenience (Shewfelt, 1986). Although temperature is the environmental factor that has the greatest influence on the deterioration rate of harvested fruits fresh cut fruits have a very limited shelf-life, even under the specific recommended refrigeration temperature due to several factors: enzymatic discolouration of cut surfaces; microbial spoilage; changes in texture and firmness of sliced fruits (Huxsoll *et al,.* 1989). Chemical dips may be used to extend shelf life of cut fruits, but they must not affect flavour , be perceived or impair product safety (Huxsoll *et al.,* 1989). Citric acid and ascorbic acid are known to retard oxidation of cut surfaces (Rosen *et al.*, (1989). Several other studies showed that dips in calcium chloride solutions reduce not only the ocurrence of physiological disorders in apples and citrus fruits but also reduce softening (Ponting *et al.,* 1972, Betts *et al.,*1977, Poovaiah, 1986, Borenstein, 1987, Baker *et al.,* 1989).

The objective of this research was the study of the effects of chemical dips in citric acid, ascorbic acid and calcium chloride on quality of cut orange (seedless regional variety, from Felgueiras, north of Portugal), stored at 4°C. Quality was evaluated in terms of physicochemical properties (colour and flavour: pH, soluble solids content, titrable acidity) and nutritional quality (L-ascorbic acid content), during 13 days. No variation was detected on colour parameters of cut orange. Citric acid and ascorbic acid dips lowered the soluble solids content. Cut orange pH is not affected by ascorbic acid dip but it is lowered the citric acid The reduction of titrable acidity and ascorbic acid content, for the untreated samples, was partially avoided by the ascorbic acid dip. On the other side, calcium chloride dip does not affect titrable acidity and affects negatively the ascorbic acid content.

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