EFFECT OF LIME CONCENTRATION AND SOAKING PERIOD FOR THE QUALITY OF BLEACHED GINGER

(Zingiber officinale)

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ABSTRACT

Ginger is cultivated in Sri Lanka in about 1529 ha and the annual production is about 8271 Mt. Eventhough there is a greater potential to expand the ginger industry, production mainly targeted the domestic market with only about 10% being exported as fresh ginger. However, the dried and value added ginger by process has great export potential. There are three types of ginger varieties cultivated in Sri Lanka, the local variety, Chinese ginger and the Indian ginger.

Bleached ginger is widely used for medicinal purposes in Ayurvedic and oleoresin extraction. It is mainly imported from India, but there is an ability to produce bleached ginger in Sri Lanka by using local varieties. Bleaching is done by treating with calcium hydroxide. However, no data is available on the exact concentration and soaking period. Therefore this research introduce to determine best lime (Calcium oxide) concentration and soaking period to produce high quality bleached ginger, under 0%, 1%, 2%, 4% lime concentrations and 2 hr, 4 hr, 6 hr soaking periods with three replicates. Moisture content, oil content, oleoresin content, calcium content, colour were determined quality parameters. It was found that the oleoresin percentage, oil percentage, calcium percentage, colour difference and lightness difference of bleached ginger were depend on soaking period and lime concentration. Oil percentage decreased with increasing soaking time and lime concentration. The highest oil percentage was obtained by the ginger sample which was soaked two hours in 1% lime solution (1.053%). Oleoresin content increased with the lime concentration but decreased with increasing soaking time. The highest oleoresin percentage (9.356%) was obtained by the ginger sample which was soaked six hours in 4% lime solution. Mean calcium content of unbleached ginger was 1.440%. The highest mean calcium content (1.940%) was obtained in the ginger sample which was soaked in 4% lime concentration for 6 hr. The lowest total colour difference (dE) and lightness difference (dL) were obtained the treatment which soaked in 4% lime for 6 hr compared to the market sample imported from India. According to the all quality parameters, with soaking in 4% lime concentration for six hours found to be the best treatment to produce bleached ginger.