

Title Effect of blanching time on sensory and quality parameters of vegetable soybeans during frozen storage
Author B.F. Krinsky and T.H. Sander.
Citation Book of Abstracts, 2004 IFT (Institute of Food Technologists) Annual Meeting and Food Expo, 13-16
 July 2004, Las Vegas, Nevada, USA. 321 pages.
Keyword vegetable soybean; blanching

Abstract

American vegetable soybean consumption is limited but potential for market growth based on increased production is high. Quality concerns require an expedited harvest dictating the product be frozen for year-round availability. Enzyme inactivation by blanching is needed to maintain nutritional and sensory quality of the bean during storage. The research objectives of the study were to determine the optimal blanching time prior to frozen storage and quality characteristic changes during storage of vegetable soybeans. Development of a descriptive lexicon and intensity references for vegetable soybean flavor were required to fulfill these research objectives. The lexicon was developed by 12 trained sensory personnel using 20 shelled and in-pod samples from 12 commercial vegetable soybean brands. Vegetable soybeans (Mojo Green) were harvested 119 d after planting. Pods were water-blanching (100 °C) in duplicate for 30, 60, 90, 120 and 240 sec and cooled in ice water. Half of each treatment was shelled and half remained unshelled. All samples were packed in plastic bags and stored at -24 °C. Samples were evaluated after 0, 2, 4, 8, 12, 24 and 36 wks. Evaluations consisted of descriptive sensory analysis, lipoxygenase activity, Hunter Lab color, texture, and vitamin C. Blanching times of 60 sec or greater were sufficient to inactivate lipoxygenase. Color and vitamin C declined significantly in the unblanched control but did not change in blanched samples. Texture analysis revealed that blanching time was inversely related to bean firmness. Descriptive sensory analysis showed that off-flavor increased at blanching times less than 60 sec and that blanching time was directly related to the development of cooked bean flavor. The results indicated that the shortest acceptable blanching time (60 sec) with respect to lipoxygenase inactivation also yielded acceptable crisp texture, minimal cooked flavor, green complex flavor, and green color.