

Public Abstract

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Title:Physicochemical and Sensory Properties of Soymilk from Five Soybean Lines

Soymilk may provide health benefits due to its soy isoflavone compounds, polyunsaturated fatty acid compositions and fibers. The main objective of this study was to investigate the effects of soybean varieties on descriptive sensory evaluation, consumer acceptance test, and texture properties of soy ice creams. Plain flavor soymilks made from five soybean lines were made in the laboratory using a soymilk maker for physical, chemical, descriptive sensory analysis, and making soy ice creams. Soymilks were placed at room temperature for 2 h first prior to the sensory evaluations. For the consumer acceptance test, soymilks were flavored with sugar and vanilla.

Soymilk fat content, protein content, and redness did not show significant differences among samples. However, high oleic acid soymilk sample and high sucrose content soymilk sample had significantly higher results on total solids content and yellowness. Moreover, the high sucrose content soymilk sample was significantly lighter than others due to its clear hilum skin. For the viscosity, high oleic acid soymilk sample was significantly more viscous than other samples because of the oleic acid composition and the molecular conformation of the triacylglyceride molecules. The viscosity also contributed to the overrun value of soy ice cream. The more viscous the mix, the lower the overrun of the soy ice cream became. Thus, the low overrun was associated with harder texture and higher melting rate.

The results from descriptive sensory evaluation showed that lipoxxygenase free soymilk was the least beany flavor and most rice-like flavor, and high sucrose content soymilk was significantly sweeter than others, but all of them did not significantly change the texture of soymilks. On the other hand, high oleic acid content soymilk was the thickest one, but was not associated with flavor aspects. Furthermore, consumer acceptance test showed that soymilk made from sample KB10-5#1137 was the best.