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EFFECT OF THERMOSONICATION ON COLOUR OF APPLE JUICE

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Nowadays, consumers prefer, nutritious and safe food products having natural taste and freshness. It is known that traditional thermal techniques can extend the shelf life of fruit juices and their safety, but they cause loss in nutritional parameters. Sonication is one of the non-thermal techniques which can achieve the better quality. Thermosonication is also a good alternative to thermal processing and has been reported to have a minimal effect on quality of fruit juices. The objective of this study to observe the effect of thermosonication on colour of unpasteurised apple juice and the differences in colour between unpasteurised thermosonicated and pasteurised samples. For determining colour changes, browning, cloudiness and CIE L* (lightness), a* (redness), b* (yellowness) values were measured. The cloudiness was also determined. The browning and cloudiness were measured as absorbances at 420 nm and 625 nm. The apple juice, obtained from Dimes A.Ş. (Tokat, Turkey), was sonicated using an ultrasonic processor at a constant frequency of 20 kHz and processing variables of amplitude level (40%-100%), temperature (30°C-60°C) and time (0-15 min). Browning, L* and +b* values increased, whereas cloudiness and +a* value decreased at the applied conditions. The L*, a* and b* values of unpasteurised thermosonicated apple juice were found higher than those of pasteurised apple juice. On the other hand, browning degree of pasteurised apple juice was determined lower when compared to that of unpasteurised thermosonicated apple juice.

Keywords: Thermosonication, apple juice, colour

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