

9th Euro-Global Summit & Expo on

Food & Beverages

July 11-13, 2016 Cologne, Germany

Effect of enzyme treatment on the turbidity and colour of pineapple juice

Ojukwu M, Osuji C M and Ahaotu A A
Federal University of Technology, Nigeria

In this research, the effects of enzymes treatment on the colour and turbidity of pineapple juice was investigated. Pineapple fruits were peeled and then cut into smaller pieces, milled before extraction in a sanitized Kenwood (JE 500) juice extractor. One portion was treated with 0.04 ppm of Pectinex Ultra Clear® (a Pectinase with a broad range pectolytic activity for clarification and stabilization of fruit juice products with declared activity of 3800 polygalacturonase units per ml), at 45°C for 1 h. The second portion was treated with a combination of 0.04 ppm of Pectinex Ultra Clear® and 0.05 ppm of Cereflo™ (a bacterial β -glucanase and hemicellulase with activity of 200 β -Glucanase units per gram (BGU/g) at 30°C). The third portion served as control. The extracted juice was filtered and samples drawn from the three portions for turbidity and colour measurements using the Hafmans Turbidity Meter VOS ROTA 90/25 and BOECO Model S-20 VIS spectrophotometer, respectively. The turbidity and colour of pineapple juice significantly ($p < 0.05$) increased after pectinase treatment. A combination of pectinase and hemicellulase increased the turbidity of the juice when compared with the control but hemicellulase significantly ($P < 0.05$) reduced the colour of the juice. Both pectinase and hemicellulase hydrolyse the fibres of the pineapple and will release soluble solids into the system thus increasing the turbidity of the system. The treatment of pineapple juice with pectinase increases the turbidity and colour of juice but combined pectinase/hemicellulase treatment increases the turbidity though less than pectinase treatment alone but causes reduction in the colour of the juice.

moses.ojukwu@futo.edu.ng
macmosesforall@yahoo.com

Application of edible film and coating in food quality maintenance of grape berries

Kyung-Bin Song and Hyun-Ju Yang
Chungnam National University, Republic of Korea

Edible films and coatings are used for food packaging to enhance food shelf-life and provide a barrier against water, oxygen, and microbial growth. Among edible film and coating materials, gelatin extracted from fish has been studied intensively. Alaska pollock by-product (APB) consists of head, skin, and bones, and is obtained during the preparation of fillets. In this study, gelatin extracted from APB was used as an edible film source. It was found that the mechanical properties of APB gelatin (APG) films prepared using fructose as a plasticizer was most desirable. In addition, rosewood essential oil or pine needle extract (PE) was incorporated into the APG film at concentrations of 0.5, 1.0, and 1.5% to provide antioxidant and antimicrobial activities. The APG film containing 1.0% PE had the most desirable physical properties (8.5 MPa of tensile strength and 226% elongation at break), as well as superior antioxidant and antimicrobial activities. Subsequently, the APG film and coating were applied to 'Kyoho' grape berries for improving the quality during storage. The populations of total aerobic bacteria and yeast and molds in the 'Kyoho' grape berries treated with the APG coating containing 1.0% PE were 3.62 and 1.46 log CFU/g lower than the control after 20 days of storage. The grape berries treated with the APG-PE coating had decreased weight loss and change in anthocyanin content compared with the control. These results demonstrate that the APG coating containing 1.0% PE is an effective treatment for maintaining the quality of 'Kyoho' grape berries.

kbsong@cnu.ac.kr