Quality Improvement of Coconut Butter Spread

U.S.S. Marasinghe[1], W.M.K. Lakdusinghe[2], T.T.D. Dharmarathne[1] and W.A.J. P. Wijesinghe[1]

[1]Department of Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka
[2]Coconut Processing Research Division, Coconut Research Institute, Lunuwila, Sri Lanka

Coconut butter spread is a delicious product from whole coconut meat and oil separation at top of the product has been identified as a major defect which can leads to consumer dissatisfaction. Thus, this study was conducted to evaluate the effect of stabilizers and homogenization speeds on the layer separation of coconut butter spread. Coconut butter spread was prepared with desiccated coconut, peanut, coco powder, sugar and salt by grinding method. Level of coco powder (1.5, 2 and 2.5% (w/w)) was changed to select the best product through a sensory evaluation of five-point hedonic scale with 30 number of human objects. Four combinations of stabilizers Soy Lecithin (SL), Sodium Caseinate (SC), Sodium Stearoyl Lactylate (SSL) and SC+SSL with two levels (0.25 and 0.5% (w/w)) and two levels of homogenization speeds (11,000 and 19,000 rpm) were evaluated as a three factor factorial design with three replicates. The height of separated oil layer was measured after two-week interval and best five treatments were subjected for quality analysis. Free fatty acid (FFA) content, peroxide value and moisture content were analyzed and best three treatments were selected for sensory evaluation with control (without stabilizers and homogenization). Proximate and microbial analysis was done for the selected best product. Data was analyzed by ANOVA ($p<0.05$) using Minitab software package. The sensory result revealed that, 2% (w/w) coco powder was provided the highest consumer preference. The lowest level of oil separation (0.18 mm) was observed on 0.5% (w/w) of SC+SSL stabilizer with 19000 rpm and it contained significantly low level of FFA (0.17±0.02%) and moisture content (0.81±0.04%) and highest consumer preference. This product conations 1.42±0.01% moisture content, 41.53±2.8% fat, 1.8±0.002% ash, 8.68±1.18% fiber and 16.96±0.98% protein. SC+SSL with 0.5% (w/w) ≤ level and 19,000 rpm ≤ homogenization is preferred to overcome the oil layer separation in coconut butter spread.

Keywords: Coconut butter spread, Stabilizers, Homogenization, Layer separation, Free fatty acid