Centrifugation in Sesame oil separation and recovery of by-products

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This investigation was with the objective of application of centrifugation for Sesame oil extraction, to increase the potential usage and the quality of the resulted products. Two different centrifuges (IEC.HN SII centrifuge and H-66 high speed centrifuge) were used for this experiment with the other equipment and materials. In the experimental procedure application of centrifugation was done with the treatments of speed, temperature and chemicals to the Sesame sample, ground in water. The control was also included.

Separation of two different fractions as liquid fraction (with further separation of upper layer and lower layer) and the solid fraction was resulted after the centrifugation process from control test. The results of the treated samples behaved in a similar manner. The basic nutrient identification tests showed that the nutrients like protein, lipid and carbohydrate were contained in the resulted products. The larger oil globules were gathered in the upper layer of the liquid fraction. Seed residues were resulted at straining in the sample preparation. Sesame oil was separated by applying heat treatment to the liquid fraction after the centrifugation. The solid fraction and seed residues were recovered as a powder by oven drying and grinding. With conclusion; the application of centrifugation for the extraction of Sesame oil resulted in separation of two fractions as liquid fraction and solid fraction. Large oil globules gathered in the upper layer of the liquid fraction. Free Sesame oil was obtained by application of heat treatment to the liquid fraction. The by - products could be recovered as a powder by drying and grinding. Further investigations can be conducted on the treatments to facilitate oil separation at centrifugation and the improvements of existing by - products and recovery methods.

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