

RETENTION AND SWELLING CAPACITIES OF COCONUT KERNEL RESIDUE

Umaieyaal Annarajah
Department of Biochemistry
Faculty of Medicine
University of Peradeniya
Peradeniya
Sri Lanka

Two types of coconut kernel samples, milk residue and oil residue (without drying and with overnight drying at 60 °C in an oven) were analyzed for their physical properties, swelling capacity and water retention capacity.

To 10 mL of deionised water (0.02% w/v Sodium Azide added), 500 mg of sample was added in a graduated measuring cylinder. Then samples were mixed by gentle stirring and initial volume and then after 18 h final volume was measured. Swelling was calculated as milliliter per gram (mL / g) of dry sample.

Residue samples were measured (0.17 g), and mixed with 10 mL of deionised water in a graduated centrifuge tube. Then the samples were mixed for 1 hr and centrifuged at 3000 x g for 20 min and supernatants were discarded. Water Retention Capacity of the milk and oil residues samples were calculated using the final weight of the residues after discarding supernatants.

The comparison of the mean values between milk residues and oil residues indicated that there were no statistically significant differences in the swelling capacity. On the whole the swelling capacity of the coconut residues was very low.

The comparison of the mean water retention capacity indicated milk residue has more water retention capacity than oil residue.

Milk and oil residues of coconut kernel showed higher water retention capacity and lowest swelling capacity compared to other dietary fibers such as apple, pea, wheat, carrot and sugar beet.