

## **SERUM LIPID CONCENTRATIONS OF RATS FED WITH SOLUBLE AND INSOLUBLE FIBRE OF COCONUT KERNEL**

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The objective of this study was to determine the effect of soluble and insoluble fibre isolated from coconut kernel residue on serum lipid profile of rats fed with hypercholesterolemic diet. Coconut kernel residue is freely available as a potential fibre source. Thirty five Wister rats (8 weeks old, male and 200 g) were purchased from Medical Research Institute, Sri Lanka. The rats were divided into five groups of 7 animals each and were housed in cages in an air conditioned ( $25 \pm 1^\circ\text{C}$ ) and light controlled room (12 hours light – darkness cycle). The rat diet was given for 7 days for adaptation to the diet. The rats had free access to water and food during the experiment. The experimental diet was prepared by incorporating 2.5 % or 7.5 % soluble fibre (SF) or 5 % or 10 % insoluble fibre (IF) and 20 % egg yolk powder. The control diet included 20 % egg yolk powder. Blood samples, 0.5ml to 1 ml, were drawn from the coccygeal vein. Total cholesterol (TC), HDL cholesterol (HDL-C) and triacylglyceride (TAG) were estimated by enzymatic methods using Randox assay kits (Randox Laboratories, Crumlin, UK). The serum lipid concentrations in basal samples drawn before the commencement of the test feed was compared with the concentrations in serum samples collected at 30 days intervals by unpaired *t* test and considered significant if  $p < 0.05$ . The serum total cholesterol (TC) concentration of rats fed with diet without fibre and 2.5 % SF increased during 90 days while the serum TC of rats fed with 7.5 % SF, 5 % IF and 7.5 % SF increased only up to 60 days and decreased on the 90<sup>th</sup> day. The serum HDL-C concentration of rats did not change significantly at the end of 90 days. The serum TAG concentrations of rats fed with 7.5 % SF, 5 % IF and 10 % IF decreased at 90 days compared to the initial serum TAG concentrations. This study reveals that soluble fibre and insoluble fibre obtained from coconut virgin oil residue had the capacity to modulate serum lipids. The soluble fibre at 7.5 % and insoluble fibre at 5 and 10% were effective in lowering of serum TC and TAG concentration of rats. The increase of serum TC and TAG concentrations at 60 days should be further investigated. Therefore coconut kernel fibre has the potential to restrain serum lipids, which are considered as major risk factors of cardio vascular disease.

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