

Preparation of a dietary fiber mixture derived from different sources and its metabolic effects in rats

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Preparation of a dietary fiber mixture derived from different sources and its metabolic effects in rats

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Abstract

In this study we analyzed a commercial dietary fiber blend known as Fiber-Plus and a dietary fiber mixture (DFM) prepared in our lab (10% apple pectin, 10% orange pectin, 36% locust bean gum and 44% corncob composed of 56% fiber). DFM provided greater inhibition of starch digestion and glucose absorption ($p < 0.05$) than did Fiber-Plus. DFM was also found to be significantly more efficient ($p < 0.05$) than Fiber-Plus at reducing the glycemic response following starch loading. Rats fed DFM or corncob demonstrated a much lower glycemic response following a test meal as compared to those fed a fiber-free diet. Both fiber sources decreased fasting cholesterol and triglyceride concentrations; transit time was shortened and fecal values were higher than those of controls. beta-glucuronidase activity in intestinal segment contents and feces was lower in rats fed fiber. We conclude that DFM is effective in controlling plasma glucose and lipid levels. Corncob, a novel fiber source, could be beneficial in the treatment of gastrointestinal tract disorders and in the elimination of carcinogenic elements.

Reference

Bijlani RL, Gandhi BM, Gupta MC, Manocha S, Tandon BN. Effect of whole buckwheat (*Fagopyrum esculentum*) flour supplementation in lipid profile and glucose tolerance. Indian J. Med. Res 81: 162-168, 1985.