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Effect of processed mung bean (*Vignaradiata* L.) on modulating serum lipid and glucose concentrations in Wistar rats (*Rattus norvegicus*)

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A high serum cholesterol level is a major risk factor for cardio vascular disease (CVD). The study assessed the *in vivo* hypocholesterolemic and hypoglycaemic effect of raw and processed mung bean powder (Variety MI 6) incorporated high cholesterol diet in comparison to the control diet in rats. Seven week old 20 male Wistar rats were randomly allocated into four groups (n=5) and fed with experimental diets *ad-libitum* for 5 weeks. Experimental diets were prepared according to the ANI-93G semi purified rodents diet and 0.5% cholesterol was added to obtain a high cholesterol diet. 0.5% cholesterol + 30% raw mung bean (RMD), 0.5% cholesterol + 30% boiled mung bean (BMD), 0.5% cholesterol + 30% sprouted mung bean (SMD) were given as treatments and 0.5% cholesterol + 10.15% casein powder (CD) as the control. No significant change ($P < 0.05$) was observed in total cholesterol levels in all treatment groups compared with the control group. Serum HDL cholesterol concentration in rats fed with SMD and BMD diets were significantly ($P < 0.05$) higher than that in the control and serum non-HDL cholesterol concentration in rats fed with SMD and BMD diets were significantly ($P < 0.05$) lower than that in the CD fed group. At the same time triglyceride levels of BMD and SMD fed groups were significantly lower ($P < 0.05$) than the RMD fed group. Triglyceride levels and serum glucose concentration levels in all treatment groups were significantly lower than in the CD fed group. Serum insulin concentrations in rats fed RMD, BMD were significantly ($P < 0.05$) lower than with CD diet. These results indicate that processed mung bean incorporated diets positively modulate both serum lipids and glucose levels higher than the control group. Within that, BMD and BSD positively modulate serum lipids more than RMD though there was no significant change in modulating serum glucose levels within mung bean fed groups.

Keywords: Cholesterol, hypocholesterolemic effect, hypoglycaemic effect, mung bean, Wistar rat