

## Brown Rice as a Healthy Food and Lowering Blood Sugar in Rats.

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**Abstract:** This investigation was carried out to evaluate and compared between brown and white rice high and low amylose. Chemical composition, total dietary fiber fractions, minerals content and total phenolic compounds were determined in brown and white rice. Biological experimental was determined in diabetic rats fed on brown and white rice high and low amylose for four weeks (30 days). Glucose blood level, total lipid, triglycerides, total cholesterol, high density lipoprotein (HDL) and low density lipoprotein (LDL) were evaluated after end of the biological experimental period four weeks. The results showed that the brown rice high and low amylose had contained the highest amount from crude protein, fat, ash and crude fiber content (8.85, 1.65, 1.9 and 1.25 % in high amylose and 8.42, 1.38, 1.83 and 1.24% in low amylose, respectively) compared with white rice. Brown rice contained a large amount of total dietary fiber soluble and insoluble dietary fiber. This is due to the fact that the whole grain contains all three components: bran, germ and endosperm. Minerals content (magnesium, potassium and calcium) and total phenolic compounds were significant increased in brown rice compared with white rice. The results after the end of biological experimental period showed that the rats fed on brown rice high and low amylose significantly decreased in serum glucose blood level (160.3 and 166.0 mg/dl), followed by rats fed on white rice high amylose (171.5 mg/dl). It is clear that feeding on rice high amylose reducing serum glucose level than white rice low amylose. The rats fed on brown rice high and low amylose significantly lowered in total cholesterol (150.0 and 160.0 mg/dl, respectively) than white rice high and low amylose (163.0 and 172.5 mg/dl, respectively). The results from HDL- cholesterol, LDL-cholesterol, total lipids and triglycerides were paralleled for total cholesterol. From this study it could be recommended that the brown rice is reach in protein, fiber, minerals and phenolic compound and it is more beneficial food for lowering glucose blood level and lipid parameters than white rice. Therefore, the brown rice is a benefit healthy food and alternative for white rice.

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**ABSTRACT** :The present study was carried out to evaluate the different parts from the artichoke (leaves and head) and effect of their extracts (200, 400 and 600 mg/kg body weight rat) as natural antioxidants on hypercholesterolemia and hyper diabetic rats. Chemical composition, fatty acids analysis, free phenolic acids and flavonoids compounds were determined and their bound of them. The results showed that the higher amount of crude protein and lower in crude fiber were the artichoke head recorded 17.85 and 29.61% whereas, the leaves was recorded 9.54% in protein and the highest amount of crude fiber was 32.41%. The artichoke (head) showed a higher content of free total phenolic compounds (14.16 mg/g dry weight) followed by the artichoke (leaves) which contained only 9.06 mg/g dry weight. On the other hand both leaves and head parts of artichoke showed the lower content of the bound phenolic compounds. The main compounds in the identification of fatty acids were palmitic (16:0), oleic (18:1 n-9) and linoleic (18:2 n-6) acids respectively in the different parts of artichoke. At the end of biological experimental for four weeks the results showed that the artichoke head was significant lowering effect on lipid parameters and serum glucose in hypercholesterolemia and hyperdiabetic rats followed by leaves artichoke. These caused the artichoke head had contained high amounts from natural antioxidants and decreased in crude fiber whereas, the artichoke leaves was the highest in crude fiber and it was decreased in natural antioxidants. Therefore, it may be recommended that the fed with different parts of the artichoke are benefit healthy food, lowering diabetics and hypolipidemic pattern.