The search for more healthful alimentary habits has stimulated the study of new food sources. Amongst these, edible mushrooms are distinguished, like those of *Agaricus* family. The aim of the present work was to evaluate dietary influence of the semi-purified diets supplemented with mushroom *Agaricus brasiliensis* in the metabolic profile of lipids in rats and their impact on blood glucose. A trial with 28 male Wistar rats separated in four groups had been carried. The first one received AIN-93 diet (CAS). The second received AIN-93 diet plus cholesterol 1% (CAS + COL). The third and fourth had been fed with AIN-93 plus mushroom with (COG) or without (COG + COL) 1% cholesterol addition, respectively. At the end of 32º day, samples had been taken to analyze cholesterol, triacylglycerols, hepatic cholesterol and hepatic lipids. Histological analyses and glicemic load were proceeding. The study showed that rats fed with *Agaricus brasiliensis* was able to change the lipid profile, reducing total cholesterol (-16%) and triacylglycerols (-26,9%). We detected in this group an increasing in HDL cholesterol (+60,2%) and reducing levels of lipids and cholesterol in liver associated with their higher eliminating in the stools ($r=0,92$). Liver architecture was preserved and there was a significant reduction in lipid deposition. The glycemic load in Agaricus fed rats, with or without cholesterol was five times lower than in control casein rats ($p<0,05$). All data together suggest the role of Agaricus mushrooms in modulate positively lipid and glicemic metabolic response in Wistar rats.