

## HYPOGLYCEMIC AND HYPOLIPIDEMIC EFFECTS OF STAR FRUIT (*Averrhoa carambola*)

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The effect of *Averrhoa carambola* (Oxalidaceae, Common name: *carambola*) fruit pulp on serum glucose concentration of healthy Sprague Dawley rats and serum cholesterol concentration of hyperlipidemic rats were studied. Several studies have reported that some parts of the *A. carambola* plant have hypoglycemic effects. Anti-hyperglycemic activity study was carried out in twenty healthy female and male Sprague Dawley rats weighing between 150-350g and the results were compared between *A. carambola* fruit pulp treated group (1600 mg/kg body weight) and control group which received only the basal diet and water. According to a pre-planned schedule, the test was carried out for 63 days and the fasting serum glucose concentrations and body weight of the animals were measured at weekly intervals. Anti-hyperlipidemic activity was carried out in twenty hyperlipidemic male Sprague Dawley rats. Hyperlipidemia was induced by feeding a diet containing 2% (w/w) cholesterol, 1% (w/w) sodium cholate and 2% (w/w) coconut oil with broiler starter. Hyperlipidemic test was carried out for 28 days and the serum cholesterol concentrations and body weight of the animals were measured at weekly intervals.

At the end of 2 months experiment, the effect of the oral treatment with the fruit pulp of *A. carambola* (1600 mg/kg/day) on fasting glycemia was examined. The difference in the mean serum glucose concentration in female rats of the test group when compared with the control group was not statistically significant ( $p = 0.452$ ). The mean serum glucose concentration difference in male rats of the test group when compared with that of the control group was statistically significant ( $p = 0.001$ ). Based on the results obtained, *A. carambola* fruit pulp treated male group showed a maximum fall of 13.6%. Thus, we can conclude that the reduction of fasting serum glucose concentration was achieved due to the treatment with *A. carambola* fruit pulp. At the end of the study, the mean body weight difference in female rats of the test group when compared with that of the control group was not statistically significant ( $p = 0.890$ ). Similarly the mean body weight difference in male rats of the test group when compared with that of the control group was also not statistically significant ( $p = 0.480$ ).

In the hyperlipidemic study, the mean serum cholesterol concentration difference in male rats on day 28 of the test group when compared with that of the control group was statistically significant ( $p = 0.016$ ). The mean body weight difference of the hyperlipidemic test group when compared with that of the control group was not statistically significant ( $p = 0.713$ ).