

# ABSTRACT

Streptozotocin-induced diabetic rats were grouped and maintained for four weeks on diets of rodent feed plus yam (*D. cayenensis*) extract or rodent feed plus dasheen (*C. esculenta*) extract or rodent feed plus commercial linamarin respectively. Healthy control rats fed normal diet-PMI Feeds Inc. Lab Diet #5001. The effects of these extracts on some metabolic processes in diabetic rats and blood glucose level in malnourished rats fed low protein diet were studied.

Diabetic rats fed normal diet and those fed yam extract, dasheen extract and commercial linamarin respectively lost weight compared to the healthy control rats despite the non-significant difference in their feed intake.

Dasheen-extract fed rats had lower blood glucose levels compared to normal rats ( $P < 0.05$ ). The diabetic condition did not affect the integrity of the liver as measured by alanine and aspartate transaminase activities.

Feeding of yam or dasheen extract to diabetic rats increased the activity of malic enzyme in the liver as compared to the unsupplemented diabetic control group. Yam extract and commercial linamarin supplements lowered the activity of glucose-6-phosphate dehydrogenase below levels seen in the normal.

In the kidney, malic enzyme was reduced ( $P < 0.05$ ) in diabetic rats fed normal diet compared to normal rats. Feeding of yam or dasheen extract raised the activity of this enzyme towards normal. Feeding of dasheen extract or commercial linamarin significantly lowered ( $P < 0.05$ ) the activity of NADP<sup>+</sup> isocitrate dehydrogenase enzyme below normal. Glucose 6-phosphate dehydrogenase activity was increased ( $P < 0.05$ ) in diabetic rats compared to normal rats.

Plasma glucose was significantly increased in malnourished rats fed dasheen extract and commercial linamarin supplement.

These observations show that the consumption of these staples may have some potential in lowering

diabetic indices in Wistar rats, though there were adverse effects on the body, liver weight and kidney.