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Protein nutritional quality of processed *Canavalia gladiata* (Awara)

The bean *Canavalia gladiata* though categorised as an unconventional legume, has agro-economical features suitable for growth in tropical climate and a high yield. Since chemical composition studies indicated a high protein content (29%), the intention of this study was to find out effect of household processing methods on the nutritional quality of protein by biological evaluation.

Evaluation of true digestibility (TD), biological value (BV) and net protein utilization (NPU) of diets made with mature *Canavalia* seed flour (40-60 μm) grits (1mm2 < grits < 2 mm2) were carried out with male Sprague-Dawly rats. The processing methods included, soaking, boiling, soaking and boiling, autoclaving, roasting of grits and roasting of flour. The NPU of all the processed samples were significantly lower than the reference ($p \leq 0.05$). The NPU of boiled only (38.6) and soaked and boiled grits (37.6) were significantly higher ($p \leq 0.05$) than the other processed samples [autoclaved grits (31.0), roasted grits (15.1) and flour (10.8) and soaked (1.6) grits). TD of heat the processed samples (boiled (84.8), soaked and boiled (76.2) autoclaved (82.0) roasted (64.5) grits and roasted flour (61.2)] increased significantly ($p \leq 0.05$) when compared to the raw (51.4) and soaked samples (35.8). The BV of boiled only and soaked and boiled grits were significantly higher than the other heat processed samples though lower than the reference ($p \leq 0.05$). The lower nutritional parameters of the soaked grits indicate that soaking give rise to some adverse components that lower the digestibility. This is also confirmed by the low digestibility of soaked and then boiled grits. Boiling of the grits gives the best nutritional parameters for protein quality.