

Abstract:

Variations in protein fractions and in vitro protein digestibility as influenced by boiling (100°C for 30 minutes) and roasting (165°C for 5 minutes) were monitored in the seeds of seven groundnut cultivars. Three of them are indigenous cultivars grown under rainfed conditions in Zalingi area of western Sudan, three are released cultivars for the irrigated areas in central Sudan and one was released for sandy soils in western Sudan. Globulin was the major protein fraction in all cultivars followed by albumin and then G3-glutelin. The seeds of the indigenous cultivar Tiskari had high albumin, while those of the cultivar Gangis were high in G3-glutelin. The released cultivar Medani was high in globulin, but was low in G3-glutelin. The fractions prolamin, G1-glutelin and G2-glutelin were found in small percentages in all cultivars. On boiling, the globulin fraction decreased significantly ($P \leq 0.05$) in the protein of all cultivars, while albumin and G3-glutelin increased. Roasting decreased the globulin and G3-glutelin but increased the albumin fraction significantly ($P \leq 0.05$). The increase in the insoluble residue during roasting indicates a decrease in the solubility of the protein. Boiling increased the in vitro protein digestibility significantly ($P \leq 0.05$) and was the most effective treatment for improving protein digestibility, whereas on roasting the in vitro protein digestibility decreased significantly ($P \leq 0.05$) for all cultivars.