

Effect Of Soaking And Germination Time On The Antinutritional Factors And Protein Digestibility Of Three Varieties Grown In Saudi Arabia

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ABSTRACT: The effect of soaking and germination time on tannin and phytic acid content, trypsin inhibitor activity (TIA) and in vitro protein digestibility (IVPD) of three sorghum grains grown in Saudi Arabia were investigated. Soaking of seeds for 24h significantly ($P < 0.05$) decreased the tannin content to 1.02, 0.75 and 0.06% for hamra, shahella and baidh varieties respectively. Also soaking of seeds resulted in 2.5, 1.9, 8.4% and 12, 33.5, 22.2% reduction in phytic acid content and trypsin inhibitor activity for the above three varieties respectively, whereas no changes were observed in the IVPD. The tannin content increased during germination of five days and reached their maximum increase in fifth day to 2.42, 2.07 and 0.45 for three varieties respectively. In contrast phytic acid was decreased during germination time and the greatest reduction observed were 54.5%, 53.4%, 51.9% after 5 days, whereas germination of seeds for 1 day brought reduction 54.1, 44.8 and 57.5% for TIA compared to the raw grains for three varieties respectively. On the other hand germination of seeds for 1 day did not give significant ($P < 0.05$) change for the IVPD, while germination for 2, 3 and 4 days caused significant decrease. Generally IVPD decreased from 83.7 to 76.9, 74.4 to 72 and from 74.7 to 72.4% respectively for hamra, shahella and baidh germinated for 5 days.