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Effect of malt pretreatment on phytic acid and in vitro protein digestibility of sorghum flour

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Abstract

Sorghum seeds of cultivar Wad Ahemed (phytate: 2.7 mg/g, tannin: 0.96% and 2 h pepsin digestion: 18%) were germinated for three days to obtain 1-, 2- and 3- days old sorghum malts. Sorghum malt was added in concentrations of 1, 2.5, 5, 7.5 or 10% to sorghum flour. The mixtures were incubated with shaking for 0, 30, 60, 90 or 120 min. Phytic acid and in vitro protein digestibility were assayed for all treatments. The results revealed that phytate content was significantly reduced. The 10% 3-day-old malt after 120 min incubation, reduced the phytate content by 83%. The in vitro protein digestibility (IVPD) was significantly improved as a result of malt pretreatment. The rate of reduction of phytate content and the rate of increment in IVPD increased with time of incubation, age and concentration of the malt. © 2000 Published by Elsevier Science Ltd.