Tittle: Evaluation of nutritional composition of Nepalese finger millet (*Eleusine coracana*)

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The present study was carried out to study the proximate composition, micro-nutrients and changes in anti-nutritional factors after germination of six different Nepalese finger millet varieties (Dalle, Kabre, Okhale, GPU-0025, GE-5016 and GE-0116) which were collected from "National Hill Crop Research (NHCR) Center", Dolakha Kabre. Out of this six varieties three (i.e. Dalle, Kabre and Okhale) were natural varieties while other three (i.e. GPU-0025, GE-5016 and GE-0116) were tube varieties. Germination of millet seeds was carried out at 28±2˚C for 3 days and changes in its anti-nutritional contents (phytic acid, total polyphenols, tannins, total flavonoids and total oxalates) and reducing sugar content were analyzed.The protein, crude fat, crude fiber, total ash and moisture content of all six varieties were found to be in the range of 6.8-7.3%, 1.3-1.7%, 2.8-3.3%, 1.9-2.2% and 13.2-14.5% on dry basis respectively. Starch content ranged from 59.8-60.3% dry basis on an average for all six varieties. Mineral such as calcium, phosphorus, iron, zinc, sodium and potassium were determined. In these different varieties, calcium content was found in the range of 300-400 mg/100g, phosphorus 230-285 mg/100g, iron 4-7.3mg/100g, zinc 1.7-2.7 mg/100g, sodium 0.6-0.95 mg/100g and potassium 620-1140 mg/100g. Germination of millet seeds for 3 days significantly decreased all anti-nutritional factors except for tannin. Phytic acid content ranged from 520-615 mg/100g dry matter before germination which reduced to 140-230 mg/100g dry matter after germination, total oxalates ranged from 20.5-22.84 mg/100g dry matter which reduced to 9.4-11.8 mg/100g dry matter after germination, total polyphenols ranged from 334-377 mg/100g dry matter which reduced to 130-179 mg/100g dry matter after germination and total flavonoids ranged from 93-144 mg/100g dry matter which reduced to 81-113 mg/100g dry matter on germination. While tannin contents increased after germination 285-394 mg/100g dry matter from 212-322 mg/100g dry matter and reducing sugar increased by 13-15 fold.The study showed that the germination of grain significantly reduced the anti-nutritional content of the grain except for tannins thereby increasing the bio-accessibility of minerals in diet.

Biography

Kunjal Shrestha has completed his master's degree at the age of 27 years from Central Department of Technology and bachelor in food technology form Central Campus of Technology, Tribhuvan Unversity, Dharan, Nepal. Currently, I am the head of department of food technology (B-Tech) in Sunsari Technical College. I had completed my thesis work in "Effects of processing on nutritional composition of Lizard plant (*Houttuynia cordata*). And looking forward to some other research work related to nutrition and plant based product to enhance healthy living.

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