

Title Nutritional quality of legume seeds as affected by some physical treatments 2. Antinutritional factors

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Abstract

Raw and treated cowpea, pea and kidney bean seeds were investigated for their content of antinutritional factors including tannins, phytic acid, trypsin inhibitors and oligosaccharides. Treatments applied included water soaking, boiling, roasting, microwave cooking, autoclaving, fermentation and micronization. Kidney bean contained the highest antinutrient content among all investigated seeds. The least tannins and phytic acid contents were recorded in Canadian cowpea while Canadian pea showed the lowest TIA. All treatments conducted caused significant decreases in tannins, phytic acid, TIA and oligosaccharides as compared to the raw seeds. Boiling caused the highest reduction in tannins followed by autoclaving and microwave cooking. Autoclaving and fermentation were the most effective in reducing phytic acid content. Heat treatments (boiling, roasting, microwave cooking and autoclaving) brought a total removal of trypsin inhibitors of all samples. Furthermore, autoclaving caused the highest reduction in oligosaccharides followed by fermentation while the least reductions were caused by either roasting or micronization with no significant difference between these two treatments.