



Influence of hydrothermal treatment on physicochemical characteristics of white beans seeds (*Phaseolus vulgaris*) produced in Côte d'Ivoire.

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ABSTRACT

Objective: Beans are eaten after cooking and the cooking methods significantly affect their biochemical composition. In this study, the effect of traditional cooking methods such as boiling and steaming on the nutritional composition and anti-nutritional factors in white beans (*Phaseolus vulgaris*) was investigated.

Methodology and Results: In both cooked and uncooked white beans, proximate composition and anti-nutritional components were determined according to standard methods. The results showed that cooking treatments decreased the nutritional and anti-nutritional composition in white beans. Boiling decreased the dry matter, ash, lipid, total carbohydrate and protein, with an average loss of 65.98 %; 31.18 %, 39.37 %; 83.42 % and 37.50 % respectively. The losses due to steaming were smaller than boiling with the values of 39.20 %, 13.06 %, 10.31 %, 54.94 % and 13.17 % respectively for the dry matter, ash, protein, lipid and reducing sugars. Excepted for phytates where losses due to steaming are slightly higher (6.38 %) compared to those of boiling (5.42 %), boiling induced higher losses on anti-nutritional composition such as total oxalates (62.88 %) and phenols (81.95 %) compared to steaming, which caused only of the less significant losses of 38.18 % and 73.42 % respectively.

Conclusion and application of results. As shown in this study steaming and boiling cooking affect the composition of white bean. They induce a loss in nutritional compounds and anti-nutritional factors in the bean. However, steaming of white bean caused slight losses in nutritional composition and antinutritional factors than boiling. Steaming could be recommended in infant feeding because it preserves nutrients necessary for their development

Keywords: hydrothermal, steaming, boiling, white bean seed, losses, Côte d'Ivoire