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Editorial Open Access

Nutrition Implications of Soaking of Pulses

Anjana Agarwal*

Nutritionist and Aromatherapist, SNDT Women's University, Mumbai, India

***Corresponding author**: Anjana Agarwal, Nutritionist and Aromatherapist, SNDT Women's University, Mumbai, India, Tel: +919958593488; E-mail: dranjanaagarwal@gmail.com

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Editorial

Pulses are nutrient dense food from plant origin and valuable ingredient in various cuisines worldwide. Pulses cannot be consumed without cooking which entails tedious and time consuming processes. However, processing induces palatability, digestibility and nutrient bioavailability influencing consumer acceptance, health and marketability of pulses [1]. Soaking is one of the prerequisite steps in cooking or germination of pulses, which improves the cooking quality, nutrient bioavailability and degrades the antinutritional factors (ANF) inherent in pulses. Soaking in plain water with or without additives like sodium bicarbonate or other soaking agents is an old age practice both at household or commercial level in order to reduce cooking time and improve colour and texture of the cooked beans. Duration of soaking, hardness of water and temperature of soaking water influence the soaking outcome [2]. Soaking significantly reduces the water soluble vitamins; loss of vitamin B1 or thiamine is more in alkaline medium but significantly improves the *in vitro* protein digestibility, starch digestibility, availability of minerals like zinc, iron and dietary fiber components such as cellulose, hemicellulose, lignin and pectin contents which vary in different genotypes of pulse seeds. Soaking during germination facilitate synthesis of Vitamin C. Furthermore, soaking tends to destroy antinutritional factors like trypsin inhibitor, phytates, tannins, saponins, β-ODAP (β-N-oxalyl-L-2,3diaminopropionic acid) and total phenol etc. [3]. However, soaking triggers synthesis of phytase enzyme, which results in leaching out of phytic acid; break down of oligosaccharides attached to aglycone, which support softening of tissues; polyphenols oxidase enzyme, which are activated, and results in degradation and loss of polyphenols. Bound fructose, which interferes with digestion gets reduced by soaking. Reduction of saponins is attributed to its structure that contains more sugar chains, which are soluble in water. Tannins are resistant to degradation and on consumption they remain in the stomach but soaking reduces its adverse effect.

References

1. Nakitto AM, Muyonga JH, Nakimbugwe D (2015) Effects of combined traditional processing methods on the nutritional quality of beans. Food Sci Nutr 3: 233-241.
2. Sat IG, Keles F (2002) The effect of soaking and cooking on oligosaccharides content of Sekar 9 dry bean variety (P. Vulgaris, L) grown in Turkey. Pak J Nutr 1: 206-208.
3. Vasishtha H, Srivastav RP (2013) Effect of soaking and cooking on dietary fibre components of different type of chickpea genotype. J Food Sci Technol 50: 579-584.