

## Nutritional and anti nutritional properties of *Achyranthes aspera* (*Apāmārga*) as a food supplement

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### Abstract

Prevalence of Non communicable diseases is increasing in Sri Lanka and Diabetes is one such disease which has much clinical importance. This study aims at formulating nutritious and therapeutic food using *Achyranthes aspera* (common weed in Sri Lanka) with rice which is our staple food. Prior to this, it was necessary to study the nutritional, anti-nutritional and anti-oxidant properties of *Achyranthes aspera* in detail. In *Achyranthes aspera* seeds, the percentage (g/100g) of moisture ( $10.2 \pm 0.2$ ), Protein ( $28.2 \pm 0.3$ ), fat ( $4.6 \pm 0.2$ ), ash ( $3.8 \pm 0.1$ ), Crude fibre ( $3.7 \pm 0.1$ ) and carbohydrates ( $49.5 \pm 0.2$ ) were determined using AOAC methods; oven drying, kjeldhal method, soxhlet extraction, ashing in muffle furnace at  $550^{\circ}\text{C}$ , Acid and alkaline hydrolysis followed by ashing and carbohydrates by difference respectively. The amounts of minerals (mg/100 g) are as follows. Seeds of *Achyranthes aspera* were analyzed for anti nutritional factors, saponins, alkaloids and steroids were present. Tannins and phenols were absent. Average weight of alkaloids are  $1.0 \pm 0.15$  mg/g on dry weight of seeds and weight of saponins of *Achyranthes aspera* is  $185.92 \pm 0.37$  mg/g on dry weight of the seeds. Since anti-nutritional factors are present in minute quantities or absent as in the case of phenols and tannins, these seeds could be considered to be nutritious. According to ABTS method (2,2 azinonis 3-ethylbenzothiazoline 6-sulphonic acid). The total anti-oxidant activity calculated as Trolox equivalent is  $5.25$  (mg/  $\mu$  mol). Anti-oxidants are found to react with free radicals in the body thus reducing cancer forming ability in the human body. *Achyranthes aspera* seeds are nutritious with high protein and high fat contents. It has anti oxidant-properties too. However some anti-nutritional factors are present. *Achyranthes aspera* seeds are reported to have important medicinal properties. Therefore, by adopting proper processing methods, a functional food can be prepared by using *Achyranthus aspera* seeds.

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