

Estimation of nutritional and anti-nutritional factors in *Aloe vera* L. gel powder

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■ **ABSTRACT** : *Aloe vera* has marvelous medicinal properties. All the nutrients present in *Aloe vera* work together in a synergistic way to create healing and health giving benefits. Biological activities of *Aloe vera* include promotion of wound healing, antifungal activity, antidiabetic effects, anti-inflammatory, anticancer, immuno-modulatory and gastro-protective properties. Keeping in view the beneficial effects of *Aloe vera*, the present study was undertaken to analyze the nutritional and anti-nutritional factors in *Aloe vera* L. gel powder. *Aloe vera* L. gel powder was analyzed chemically for proximate composition, available carbohydrates, mineral content, dietary fibre constituents and anti-nutritional factors like tannins, saponins and phytic acid. It was found that *Aloe vera* L. gel powder had 11.9 per cent moisture, 5.8 per cent crude protein, 0.9 per cent crude fat, 0.4 per cent crude fibre, 4.8 per cent ash, 76.2 per cent carbohydrates and provided 336 kcal of energy. It had 1.20 per cent total sugars, 0.62 per cent reducing sugars, 0.58 per cent non-reducing sugars and 0.59 per cent starch. The concentrations of minerals zinc, chromium and iron were 2.35mg per cent, 0.09 mg per cent and 1.46 mg per cent, respectively. In dietary fiber constituents, *Aloe vera* L. gel powder had 0.4 per cent neutral detergent fibre, 0.3 per cent acid detergent fiber, 0.1 per cent hemicelluloses, 0.3 per cent cellulose and 0.4 per cent pectin. The amounts of antinutritional factors like saponins, tannins and phytic acid content in *Aloe vera* L. gel powder was 0.01 per cent, 0.01 per cent and 0.08 per cent, respectively.

■ **KEY WORDS** : *Aloe vera* L., Proximate composition, Available carbohydrates, Mineral content, Dietary fiber constituents, Anti-nutritional factors

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Aloe plant is a native of the parts of Africa, especially South Africa's Cape Province and the mountains of Tropical Africa. It is also grown in subtropical and tropical locations including South America and Caribbean. *Aloe barbadensis* Miller is the only plant that is known to have legendary medicinal reputation dating back to thousands of years ago (Yebpella *et al.*, 2011). With the recent resurgence of herbal products as a part of 'green movement', *Aloe vera* is witnessing a new renaissance across the world. Emphasis on agricultural diversification has led to a search of alternatives that are profitable and environment friendly. Global market data reveal that the opportunities are expanding in the herbal sector with market growth rate of 15 per cent per annum in India and 7 per cent per annum in the world. Total production

of aloe in India is estimated to be about 1, 00,000 tones (Anonymous, 2006).

Indian farmers have been looking for some better alternative to diversify from traditional agriculture due to gradual reduction in profitability owing to decline in productivity, increased incidence of diseases and pest attack in traditional crops. Therefore, contingent upon their hardy nature and higher returns, medicinal plant cultivation (like *Aloe vera*) may be considered a better option (Gulia *et al.*, 2009).

The aloe leaf can be divided into two major parts namely, the outer green rind, including the vascular bundles, and the inner colorless parenchyma containing the aloe gel. *Aloe vera* gel has got the potential to be used as a food preservative, as