

EVALUATION OF ASCORBIC ACID FROM SOME TREE SPECIES OF CANAL IRRIGATED AREA OF RAJASTHAN

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Four tree species of canal irrigated area of Rajasthan namely *Ailanthus excelsa* (Simaroubaceae), *Prosopis juliflora* (Mimosaceae), *Salvadora oleoides* (Salvadoraceae) and *Tecomella undulata* (Bignoniaceae) have been selected for the evaluation of ascorbic acid contents. Maximum ascorbic acid contents was found in the fruits of *Salvadora oleoides* (118.14%) while minimum in shoots of *Prosopis juliflora* (38.16%).

Keywords : Ascorbic acid; Electron donor; Livestock feed.

Ascorbic acid is also called anti-scorbutic. Vitamin C is an important primary plant product and well known for its property as an electron donor in photosynthetic photophosphorylation. The role of ascorbic acid in plant growth and metabolism have been worked out by various workers¹⁻⁴. Free endogenous ascorbic acid has been reported from *Argemone mexicana*⁵ and some arid zone tree species^{6,7}. Some newly introduced plant species growing in canal irrigated areas of north-western Rajasthan have been recently studied for their ascorbic acid status⁸. In the present study, attempts have been made to investigate the quantitative production of free endogenous ascorbic acid in the shoots and fruits of *Ailanthus excelsa*, *Prosopis juliflora*, *Salvadora oleoides* and *Tecomella undulata*.

Fresh and healthy shoots and fruits collected from canal irrigated area of Pugal, Chhattargarh of Bikaner (Rajasthan) were dried and homogenised in a mortar with 2% Metaphosphoric acid (MPA) (10 mg powder: 1 ml MPA) and allowed to macerate

for one hour. The mixtures were centrifuged at low speed (2500 rpm) and supernatants were used for estimation of ascorbic acid following the colorimetric method⁹. Absorbancy of each of the samples were measured on a spectroni-20 colorimeter (Bausch & Lomb) set at 546 nm against blank. Five replicates were taken and values were expressed in mg/100 g.d.w. \pm SE.

Shoots and fruits of all the selected four tree species showed much variation in the ascorbic acid contents, it was found maximum in the fruits of *Salvadora oleoides* (118.14 mg/100 g.d.w.) while minimum in shoots of *Prosopis juliflora* (38.16 mg/100 g.d.w.) in Table 1.

The foregoing studies thus indicate that tree species growing in canal irrigated areas of Rajasthan are not only useful for forages for cattle from the nutritive point of view but these are also important as they contain appreciable amount of ascorbic acid (Vitamin C) which is considered as one of the essential constituents of the livestock feed.

Table 1. Ascorbic acid concentration in the shoots and fruits of selected tree species. (Values in mg/100 g.d.w. \pm SE)

Tree species	Shoots	Fruits
<i>Ailanthus excelsa</i>	42.44 \pm 0.1619	84.72 \pm 0.708
<i>Prosopis juliflora</i>	38.16 \pm 0.5515	43.42 \pm 0.775
<i>Salvadora oleoides</i>	115.02 \pm 0.865	118.14 \pm 0.8363
<i>Tecomella undulata</i>	78.84 \pm 0.5575	98.92 \pm 0.775

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