

Dependency of primary metabolites production and their variability against climatic factors in *Blepharis indica* T. Anders: a vulnerable medicinal plant from the indian arid zone

Authors:

**Purushottam Lal¹,
Sher Mohammed¹ and
Pawan K. Kasera²**

Institution:

1. Department of Botany,
Govt. Lohia PG College,
Churu-331001,
Rajasthan, India.

2. Department of Botany,
J.N.V. University, Jodhpur-
342 033, Rajasthan, India.

**Corresponding author:
Sher Mohammed**

ABSTRACT:

The present paper deals with the quantitative production and pattern of variation in various primary metabolites of *Blepharis indica* T. Anders (Acanthaceae) during different months of evaluation in response to prevailing environmental conditions. The metabolites, viz. leaf pigments (chl. *a*, chl. *b* and carotenoids), proline, sugars (soluble, insoluble and total), crude protein and phosphorus contents varied significantly according to different growth phases of the plants. The amount of water in and out of the plant body strongly influenced the biosynthesis rate of these metabolites primarily, whereas the growth stage and temperature affects were found secondarily. Higher values for accumulated proline, carotenoids and phosphorus contents were observed during the end of growing season, i.e. December; while chlorophylls (chl. *a*, *b* and total) during middle of season, i.e. August to October. Total sugars and crude protein values were highest during July with a clear negative correlation having proline accumulation.

Keywords:

Blepharis indica, medicinal plant, primary metabolites, vulnerable, climatic factors.