

ORIGINAL RESEARCH

Proline accumulation patterns with relation to surface soil moisture in *Mollugo cerviana* (linn.) Ser. - a small-sized medicinal herb from the Indian arid zone

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ABSTRACT:

The present work deals with the proline accumulation in *Mollugo cerviana*, a drought escaping xerophytes from two different sites during July to October 2012-14 in arid conditions of Churu region. The Indian arid zone primarily suffers from moisture deficiencies all over the year excepting the precipitation days. During the present study, the lowest proline values were observed during July at both sites when monsoon showers moistened the upper-most soil layers as well as the plants were in juvenile stage. As the season proceeds, the proline accumulation showed an increasing trend till September, being highest (4.9165 $\mu\text{g g}^{-1}$ f. wt.) from site-I. Interestingly, the values decreased during October when the plants were in nearly to dry indicating the enhanced protoplasmic respiration in senescence plants. It is obvious from the study that plants accumulate more proline against moisture scarcity in upper soil layers (0-5 cm) during July to September as compared to end of the season, i.e. October.

Keywords:

Mollugo cerviana, proline, water scarcity, soil moisture, medicinal, Indian arid zone

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