



## Diversity of the pigment, proline, soluble sugar and ion content of three populations of *Haloxylon ammodendron*

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### Abstract

This study investigated the variation in the pigment, proline, soluble sugar and ion content of three populations of *Haloxylon ammodendron* in Yazd province. This was carried out using one-year old plants of the same size from each population. Sampling occurred in a factorial experiment conducted using a randomized complete design with five replicates. The results showed that chlorophyll *a* and total chlorophyll in the green population were significantly greater than in the other populations. The highest and lowest amounts of chlorophyll *a* were 3.27 and 0.10 mgg<sup>-1</sup>fw for the green and pink populations, respectively. In contrast to chlorophyll *a*, the amount of carotenoid in the red population was significantly greater than in the green population at over three times the green value. The amounts of anthocyanin, phenoles and flavonoids in the pink population were significantly greater than in the other populations. The amount of soluble sugar in the pink and red populations were significantly greater than in the green one. It appears that the high amounts of the pigment in the red and pink populations increases their antioxidant abilities.

**Keywords:** Anthocyanin, Antioxidants, pigments, *Haloxylon ammodendron*, phenotype.

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