

## Studying the Ecological Properties of the Desert plant *Stipagrostis pennata* (Trin.) De Winter in the Sandy Dunes of Rige-Boland in Aran and Bidgol

Batooli\*, H.

1. Kashan Botanical Garden, Agriculture and Natural Resources' Research Center of Isfahan, Kashan, Iran.

### Abstract

The ecological properties of *Stipagrostis pennata* (Trin.) De Winter, across the sandy dunes in the desert, have been studied in the present experiment. For so doing, the habitats of this plant across Rige-Boland deserts of Aran and Bidgol were identified. Afterwards, its ecological traits such as: the elevation range, topography, climate, soil structure, accompanied plant species, the quality of the presence of the species in the vegetation, root system, phenology, and the natural propagation of the plant were examined. The obtained results indicated that plant's habitats are extended in the form of spots across the slopes of the active and running sandy dunes. The major habitats of this desert plant are located in an elevation range of 750 to 1150 m above the sea level. The average annual rainfall in the habitats of *S. pennata* ranged from 80 to 120 mm. This plant grows in relatively deep soils, with sandy soil texture, 7.5 to 8.5 pH, and an electrical conductivity of 0.4 to 5.1 ds/m. The canopy cover percentage of this species in the habitat is 3.1 to 6.2% and the average of the basis density per hectare ranges from 468 to 937. The vegetative growth and flowering stages of the plant respectively begin in mid-February and mid-April. The seeds of the plant ripen and fall at the end of June. The propagation in the plant takes place by means of the seeds and the formation of numerous aerial leaps at the collar of the plant. The most prominent accompanying plant species in the habitats of *S. pennata* include: *Cyperus eremicus* grasslands, different species of *Calligonum* L., and *Smirnovia turkestanica*. On the basis of the results, it can be concluded that *Stipagrostis pennata* (Trin.) De Winter is a psammophyte and desert plant that plays an important role in maintaining and stabilizing the unstable sandy soils and providing forage for livestock in winter pastures.

**Keyword:** Autecology, Desert, Sandy dunes, *Stipagrostis pennata* (Trin.) De Winter, Psammophyte plants.

---

\*Corresponding Author. (Ho\_Batooli@yahoo.com)