

Abstract

Accessibility to a major portion of information about vegetation cover function of ecosystems is provided by the way of autecological study of plant species. Autecological study of plant named *Desmostachya bipinnata* carried out in Sistan plain. This species is a perennial plant from Poaceae family. For autecological study of *D. bipinnata*, first determine vegetation habit of this species in Sistan plain. Then, ecological characteristics such as climatic and edaphic characters of vegetation habit, root system, phenology, reproduction, preference value and chemical compounds were assessed. The result showed that this species grows as continuous spots at eastern north of study area. Based on data collected in several years, annual rainfall of the study area is 60.8 mm and means annual temperature is 22°C. This species appears on soils with loam and sandy loam texture and pH of 8.03-8.31 and salinity of soil was 10-60 ds.m⁻¹. The plant has a Adventitious root system and rhizome that penetrates in the soil about 2 meters. Root has a lot of subsidiary branches in surface of soil. At different station, canopy cover of this species was about 14 - 28. Vegetation growth stage of *Desmostachya bipinnata* species usually starts in late February and flowering complete at May and seed ripening start at July. Above ground materials of *Desmostachya bipinnata* contains 7.56% and 6.71% crude protein in their leaf and stem respectively. Preference value of this plant is 25% for sheep and goats. This species has a high level of resistance to be grazing and relatively harsh natural conditions. With mentioned characters above, this plant is a suitable species to be used in management and amendment programs for Sistan plain.

Key words: Autecology, *Desmostachya bipinnata*, Phenology, Sistan plain



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