

Evaluation of Heavy Metal Concentrations of Stem and Seed of *Juncus acutus* for Grazing Animals and Birds in Kızılırmak Delta

Authors : N. Cetinkaya, F. Erdem

Abstract : *Juncus acutus* (Juncaceae) is a perennial wetland plant and it is commonly known as spiny rush or sharp rush. It is the most abundant plant in Kızılırmak grassland, Samsun, Turkey. Heavy metals are significant environmental contaminants in delta and their toxicity is an increasing problem for animals whose natural habitat is delta. The objective of this study was to evaluate heavy metal concentrations mainly As, Cd, Sb, Ba, Pb and Hg in stem and seed of *Juncus acutus* for grazing animals and birds in delta. The *Juncus acutus* stem and seed samples were collected from Kızılırmak Delta in July, August and September. Heavy metal concentrations of collected samples were analyzed by Inductively Coupled Plasma – Mass Spectrometer (ICP-MS). The obtained mean values of three months for As, Cd, Sb, Ba, Pb and Hg of stem and seed samples of *Juncus acutus* were 0.11 and 0.23 mg/kg; 0.07 and 0.11 mg/kg; 0.02 and 0.02 mg/kg; 5.26 and 1.75 mg/kg; 0.05 and not detectable in July respectively. Hg was not detected in both stem and seed of *Juncus acutus*, Pb concentration was determined only in stem of *Juncus acutus* but not in seed. There were no significant differences between the values of three months for As, Cd, Sb, Ba, Pb and Hg of stem and seed samples of *Juncus acutus*. The obtained As, Cd, Sb, Ba, Pb and Hg results of stem and seed of *Juncus acutus* show that seed and stem of *Juncus acutus* may be safely consumed for grazing animals and birds regarding to heavy metals contamination in Kızılırmak Delta.

Keywords : heavy metals, *Juncus acutus*, Kızılırmak Delta, wetland

Conference Title : ICASRN 2018 : International Conference on Animal Science and Ruminant Nutrition

Conference Location : Cape Town, South Africa

Conference Dates : November 15-16, 2018