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### Abstract

In order to study the effects of irrigation with different levels of urban treated waste water on feeding value of forage sorghum (Var. Speed feed and Sugar graze), maize (Var. SC 704) and millet (Var. Nutrifeed) an experiment was conducted at Experimental Station No.1, Astan Qods Razavi Mashhad, and Animal Nutrition Laboratory, College of Agriculture, Ferdowsi University of Mashhad. Four varieties of forage plants with five levels of treated waste water: %0, %25, %50, %75 and %100 were compared in a split-plot experiment based on Randomized Complete Block Design with four replications per treatment. Feeding values of forage plants such as Crude Protein content (CP), Neutral Detergent Fiber content (NDF), in vitro Dry Matter Digestibility (DMD), Organic Matter Digestibility (OMD) and D-Value were measured. Results showed that treated waste water irrigation had a significant effect on crude protein content. The highest crude protein content was shown at % 100 treated waste water (% 13.76) and the lowest was shown at % treated waste water (%9.54). There were no significant differences between %0 and %25, and also %75 and %100 treated waste water in terms of crude protein content, but there were significant differences between %50 and other treated waste water treatments (except 75% treatments). There were no significant difference between irrigation with different levels of treated waste water in terms of NDF, in vitro DMD, OMD, and D-Value. There were significant differences between forage plants in all studied characteristics, but there were no significant differences on interactions between forage plants and different levels of treated waste water treatments. Forage maize had the highest in vitro DMD at %75 treated waste water and forage sorghum (var. Speed feed) had the lowest in vitro DMD at %0 treated waste water treatments with averages of %77.57 and %61.6, respectively. The results indicated that treated waste water increased the percentage of crude protein content but there were no any change in terms of NDF, DMD, OMD and D-value.

**Keywords:** Forage plants, irrigation, treated waste water, quality-related characteristics.

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