5.8 Utilization of industrial waste water and sewage in forage production

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Research was conducted over a two- year's period at Hassahisa textile farm and the faculty of agriculture of University of Khartoum to evaluate possibility of using industrial waste water for forage production. Utilization of waste water and marginal land for forage production to provide animal feed during droughts and forage shortages was another objective. Introduction of new leguminous species namely (Guar) in marginal land with waste water is a third objective of the study. Treatments consisted of pond soil irrigated with waste water, pond soil irrigated with normal water, normal soil irrigated with waste water, and normal soil irrigated with normal water. Forages tested in these treatments were cereals (Abu sabien, Maize, Pioneer 988, and Grawia, and leguminous forages (Lubia, Guar). Results showed no significant differences on growth parameters and biomass production. No phyto toxicity symptoms were observed on forages of all treatments. Results revealed no significant differences with respect to dyes and pigments absorbed by forages comparing pond soil with both irrigated water versus normal soils, which indicated that there were not any dyes or pigments were absorbed. There were neither significant differences in cereals nor leguminous crops nutritive values in all experiments. Micro and macro nutrient constituents were within the recommended levels. Trace elements were within the permissible limits and below toxicity level. In the light of these results, industrial waste water can be used safely and successfully in forage production to cope with high demand for production in cities and urban areas and to minimize pollution.