

ABSTRACT

Effluents from ITI tanneries were examined for its chemical nature, and effects of its different concentrations were investigated on two wheat cultivars Inqlab-91 and Khyber-02. The two cultivars were grown in pots of Botanic garden G.C. University, Lahore during 2005-2006 wheat growing season. The waste water was found alkaline with (pH 8.2) higher values of BOD (195mg/l), COD (985mg/l), TDS (3626mg/l), TSS (176mg/l) and SAR (43.3) than the standards set by the Govt. of Pakistan (NEQS). The amount of Cr, Cu and Fe was above than NEQS and the amount of Ni, Pb, Cd, Zn and Mn was within the standards set by the Govt. of Pakistan. The effluents were diluted to 25%, 50%, 75% and 100% concentrations and the soil was treated with these concentrations prior to sowing. The effect of treatments given to soil was investigated on vegetative and reproductive growth along with chlorophyll contents of leaf. Plants height, number of leaves on main stem & tillers, number of tillers, number of senescent leaves, plants fresh and dry weight, number of grains production, leaf area and chlorophyll contents were significantly decreased in higher effluent concentration as compared to control. Tanneries effluent concentrations considerably reduced growth parameters and yield of two wheat cultivars. Overall results of this investigation revealed that treatment of soil with effluents was harmful for plant growth. Cr, Cu, Fe and other trace elements were absorbed and transported throughout the plant including seed, which probably reach the human body through food chain. Inqlab-91 was good in vegetative growth and Khyber-02 was good in grains production. The heavy metal uptake in Inqlab-91 was more than the Khyber-02. That may be the reason that more heavy metal uptake in Inqlab-91 affected the reproductive growth of the plants. Four plants were tested for heavy metal uptake their names are *Atriplex crassifolia*, *Acacia nilotica*, *Alhaji maurorum* and *Calatropis procera*. The plant that was taken near the source was having maximum amount of heavy metals.