GROWTH CHARACTERISTICS AND PERFORMANCE OF VETIVER, VETIVERIA ZIZANIOIDES, AS VEGETATIVE BARRIER FOR EROSION

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ABSTRACT

Soil erosion by water is a serious problem in sub-mountaneous region of Punjab (India). Vegetative methods of erosion control being more effective both in terms of action and cost need consideration in the area. A study was undertaken in the region to study the growth patterns of vetiver and its performance as vegetative barrier against the running water. Growth characteristics such as survival, height, clump girth and biomass were studied on loamy sand, sandy loam and sandy clay loam soils both under irrigated and un-irrigated conditions. Another experiment was conducted on field plots with 4% slope steepness and strips of vetiver barriers, with the inter-strip areas planted with corn during summer and wheat during winter season. The runoff and soil loss were recorded from these strips after each rainfall event. Survival of vetiver *plants increased with increase in fineness of soil texture as well as soil moisture content. Increasing the number of plants per hill from one to six increased the plant survival.* Vetiver *plants established quickly after transplantation as evidenced from plant height, clump girth and biomass after first year of study.* Vetiver *barriers decreased runoff losses to the tune of 40-48% and soil losses by 53-75% from that without barriers. The daily rainfall-runoff relationships could best be described by log-linear function. However, in case of* vetiver *barriers value of R^2 was low due to the eraticity of runoff production.*