

**Design of Surface Drainage System for Bulandshahr Area**

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**Abstract**

High irrigation intensities or excess precipitation may cause drainage congestion on the surface of the soil or in the root zone of crops. If the top soil of such area is less permeable than the situation becomes alarmingly worse. Such a situation is found in the Bulandshahr district of Uttar Pradesh. In this study the analysis of ground water table data for the pre and post monsoon period for last 20 years was carried out. It was observed that the water table in the entire area was fairly deep and as such there was no problem of water logging due to high water table. The daily rainfall data for the last 49 years was collected and using SCS model the surface runoff was calculated. Using remote sensing technique the land use pattern of the area was obtained and the design capacity of the drainage system for the area was calculated. The study showed that the area is suffering from the problem of surface drainage, mainly because of flat topography of the area and the presence of carbonate in the soil which reduces the hydraulic conductivity of the soil and increases runoff. The capacity of the existing drains in the area is also not adequate to handle the total runoff from the fields. The discharge taking place from the fields was calculated and the required capacity of the drains to carry that discharge for the study area was found out as 1 .86 lit/sec/ha.

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