

## Application of SCS-CN based sediment yield models on small scale experimental plots using artificial rainfall

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Soil Conservation Services - Curve Number (SCS-CN) method is highly renowned for its application of rainfallrunoff modelling. However, it has also been used for sediment yield modelling in recent years. This study was carried out to understand the application of USLE-based SCS-CN sediment yield models (S1, S2 and S3) for computing total sediment yield from a storm event. Nine experimental plots at Toda Kalyanpur, India were considered for this study. The experimental plots were of the same size  $(12 \times 3 \text{ m}2)$ , but with different land use characteristics and slope values. These plots were subjected to artificial rainfall, and the corresponding runoff and sediment yield were measured. The sediment rating curves were drawn between the observed sediment and observed runoff for the plots of different slopes. An increase in sediment yield (mass) was observed with an increase in runoff as well as the slope for all land uses viz., wheat, lentil and fallow land. Performance evaluation was done among the three selected models based on efficiency measures viz., NSE, PBIAS and RMSE. From the results obtained, the models (S1 and S3) performed much better than the model S2 with  $\lambda = 0.2$ .