

Verification of Nutrient Transport Modeling of a Bison Feedlot

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Abstract: Runoff from an unpaved bison feedlot was measured for two years. It was aimed to determine a runoff curve number, develop a relationship between rainfall and runoff, and evaluate the equations in the Erosion-Productivity Impact Calculator (EPIC) and Agricultural Non-point Source (AGNPS) models for the prediction of runoff nutrient contents from a bison feedlot. A runoff curve number of 93 was determined using rainfall/runoff data. A simple regression equation was developed to estimate runoff as a linear function of rainfall. Organic-N and P were predicted with high correlation coefficients of 0.89 and 0.81, respectively. Results showed that use of EPIC and AGNPS model equations is a promising method for runoff quality/quantity estimation.

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