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DAYS



Lancaster Farming, Dec 21, 1985-A25 **Determining**

soil loss

CHICAGO, IL - A new concept for predicting soil erosion on hillslopes contests an old theory that long slopes with steep grades erode the most soil. As L. Darrell Norton told the American Society of Agronomy, more soil erodes on slopes of shallow grade and short length.

He said concave (saucer-shaped) depressions with runoff flowing to one basin accumulate the most sediment while convex (arc-shaped) slopes with runoff flowing in different directions cause the most erosion.

The Universal Soil Loss Equation, developed in 1965, only considers soil erosion to estimate average annual loss. Norton's findings show that sediment must be included with soil loss when calculating prediction models.

He used a closed drainage basin (all sediment settling within one field) for his study site. The land, cultivated for 145 years by one family, contained 1-to 5-percent slopes similar to contoured fields throughout much of the Corn belt.

Norton, soil scientist USDA's with Agricultural Research Service, National Soil Erosion Research Laboratory, West Lafayette, Ind., said the most obvious effect of the erosion-sediment interaction on this old watershed was the way the land contours changed and smoothed out through the years. The balance between the shape of the land and how time and cultivation affect it determines the overall erosion rate.

Knowing where this balance shifts-for instance, deposits exceed erosion on long steep slopes with many humps and hollows-is the key to constructing accurate prediction models for a long-term average erosion rate, Norton said.



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