



UNITED STATES DEPARTMENT OF AGRICULTURE  
Soil Conservation Service

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13260

AGRONOMY #50

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FIELD MEASUREMENT OF RILL EROSION IN TONS/ACRE

The method explained below for measuring rill erosion in tons per acre is known as the Alutin Rill Erosion Method. This procedure accounts for 80 percent of lysimeter measures that involve losses of 5 to 100 tons per acre. Losses greater than 100 tons per acre are usually beyond the realm of rilling.

The basic formula used in this calculation is:

Tons per acre soil loss = sum of cross section of rills in square inches along a measured lineal distance of 12.5 feet across the slope.

The procedure for field measuring rill erosion that is generally accepted is as follows:

- Step 1 - Place off or measure a lineal distance of 37.5 or 75 feet across the slope.
- Step 2 - Measure in inches the width and depth of each rill along the chosen distance.
- Step 3 - Multiply each width and depth reading to obtain a product in square inches.
- Step 4 - Add all products of readings along chosen distance.
- Step 5 - Divide this sum by 3 if a 37.5 foot distance was selected, and by 6 if 75 feet was chosen. The result is tons of soil loss per acre.

*Jerome E. Arledge*

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Prepared by A.L. Oleson, Agronomist, May 8, 1981



EXAMPLE

Width (in.) x Depth (in.) = Area in sq.in.

3	3	9
2	3	6
3	6	18
4	6	24
3	5	15
5	6	30
		<u>102</u>

For a chosen distance of 37.5 feet, the soil loss in tons/acre =  
 $102/3 = 34$  T/ac.

*James E. Albery*