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UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

Rm. 400, Midtown Plaza, 700 East Water Street, Syracuse, N. Y. 13210

AGRONOMY #38

November 9, 1972

MANURE AS A MULCH FOR EROSION CONTROL

The attached Technical Note contains information prepared by Joseph W. Turelle, Chief Agronomist, Washington, D. C. It provides "C" Values for various rates of manure application as protection against water erosion.

Attach.

John E. Fitchner acting
Jack L. Barrick,
State Resource Conservationist.

AC, DC, BO

TECHNICAL NOTES

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service - Regional Technical Service Center
7600 West Chester Pike, Upper Darby, Pennsylvania 19082

September 18, 1972

RTSC - TECHNICAL NOTE - AGRONOMY - UD-13

Re: Manure as a Mulch for Erosion Control

Research and field experience have shown that manure applications, in sufficient quantities and allowed to remain on the surface, will provide considerable protection against erosion.

Research backs this up. In USDA experiments in Ohio, ARS and State Investigators found that manure mulching reduced erosion on 10 to 12 percent slopes to 0.5 tons per acre as compared to 12.2 tons per acre on unmulched land. The report did not specify rate of application. In another experiment at Zanesville, Ohio, runoff and soil loss were measured from two corn plots; one topdressed with manure and one not, on a 12 percent slope of Muskingum silt loam. Erosive rainfall was heavy the first year of the experiment. Soil loss from the untreated plot from late June until harvest was 41 tons an acre, and from the treated plot only 1.4 tons per acre. Runoff loss of rainfall from the topdressed plot was less than half of that from the untreated plot.

In an effort to relate the effectiveness of manure to vegetative residue, an estimated "C" value for its use in the soil loss equation, we converted quantities of manure to dry matter content.

Generally, dry matter (solids) in manure is about 16 percent. Accordingly, the "C" values that one may use for applying manure are as follows (cattle manure):

STC, NE
DIR, CA
RTSC
Washington, DC (J.W. Turelle)-2

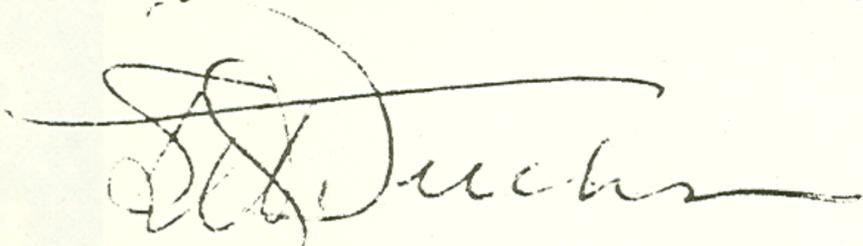
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20 tons manure per acre - estimated "C" value -- .03
15 tons manure per acre - estimated "C" value -- .07
10 tons manure per acre - estimated "C" value -- .20
5 tons manure per acre - estimated "C" value -- .40

This procedure was developed by Joseph W. Turelle, Chief Agronomist, Washington, D.C., and has the concurrence of Dr. Walter Wischmeier, ARS, National Soil Loss and Runoff Laboratory, Purdue University.



SHERRILL H. FUCHS
Regional Agronomist