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Pave Your Waterways With Grass

Michigan State University Cooperative Extension Service

F Folder Series

State Soil Conservation Committee of Michigan, Cooperative Extension Service of

Michigan State College, Soil Conservation Service of the U.S. Department of Agriculture

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Pave Your Waterways With Grass



Prepared Cooperatively by the

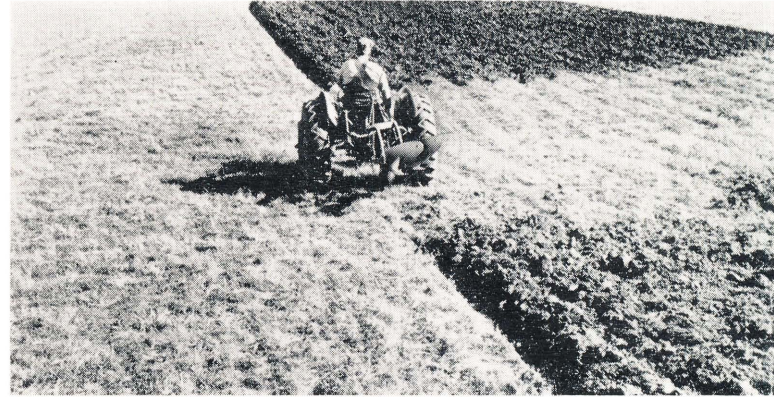
State Soil Conservation Committee of Michigan

Cooperative Extension Service of Michigan State College

**Soil Conservation Service of the U. S. Department
of Agriculture**

USE NATURAL DRAINAGE WAYS

Grass waterways are natural or prepared outlets for carrying surplus water from farm land. Protection of these natural drainage ways from erosion and gullying by use of good sod cover is a need on many Michigan farms. Clean cultivation and filling by tillage of small gullies as they form in unprotected waterways speeds up the loss of top soil, gully formation and siltation of streams. Grass waterways are a very essential part of the soil conservation and water disposal system for farm land. They are used in cooperation with other soil conservation practices.



Leave sod in waterways when plowing.

plowed. Small sodded waterways may be established when grain is seeded by doing the necessary construction, extra seeding, fertilization and protection. Where gullies have formed or where the edges are irregular and steep, it will be necessary to fill and grade to get the proper shaped waterway before seeding.

Large waterways and terrace outlets should be properly designed and constructed. They should not be attempted without knowing the proper specifications. It is recommended that assistance be obtained from the Soil Conservation Service technician assigned to your soil conservation district, or from your county agricultural agent.



Grass waterways remove water without gullyng.

STUDY THE NEEDS TO DETERMINE LOCATION, SIZE AND SHAPE

Waterways must be (1) large enough to carry the run-off water (a minimum of one rod for the smallest waterways) (2) they should be wide and have gradually sloping sides with the center slightly lower so they can be crossed with machinery (3) covered with grass to protect the channel from erosion, and (4) maintained year after year.

METHOD OF ESTABLISHING WATERWAYS DEPENDS UPON PRESENT FIELD CONDITIONS

A good time to establish waterways is when the watershed is covered with sod. If the field is in hay or pasture and a good sod is already present, the easiest way to establish a grass waterway is to leave sod in the natural drainage way when the field is

Shape waterways before seeding.

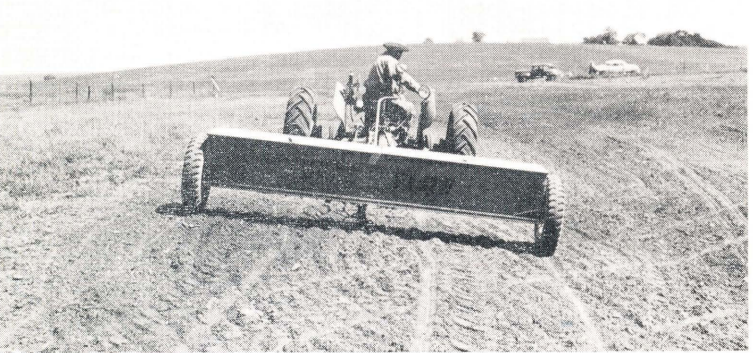


PREPARE A FIRM SEED BED

After the waterway has been properly designed and shaped, make a good firm seed bed. Before preparing the seed bed, apply lime if the soil tests less than PH 6.2. Spread 20 to 30 loads of manure per acre, then work the soil thoroughly with a disk or plow, or both. Harrow to smooth and cultipack to firm the seed bed.

USE FERTILIZER

A heavy application of commercial fertilizer is needed to get the grass and a dense sod quickly started. Apply 500# per acre of a complete fertilizer. For most conditions use a 3-12-12 or 4-16-16

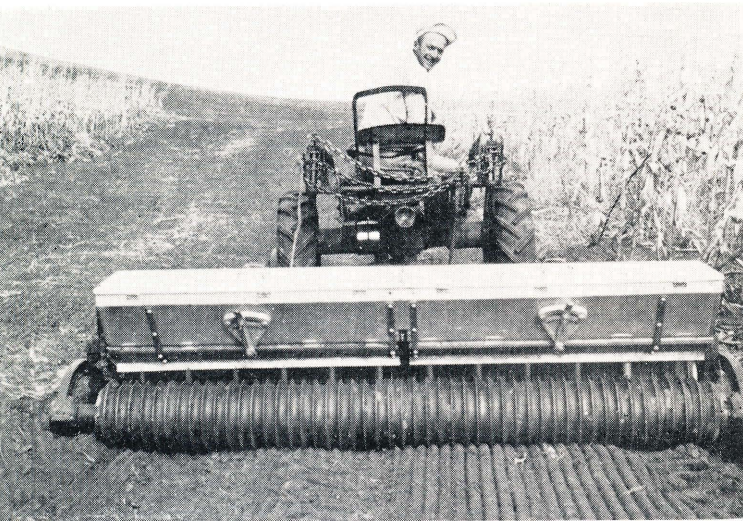


Fertilize liberally—lime where needed.

analysis. In cases where manure is not available and straw is used as a mulch, add 50 to 100 pounds per acre of ammonium nitrate in addition to the complete fertilizer. This is especially true on sandy soils.

SEED A SIMPLE MIXTURE

A seed mixture of two or more grasses is preferred; however, some farmers prefer one grass with a companion crop. Legumes in most cases tend to weaken the sod. Use two or three times more seed than ordinarily used for meadow seedings. A mixture of smooth brome (10 lbs.) ryegrass (3 lbs.) Kentucky blue grass (5 lbs.) and red top (2 lbs.) are the grasses most often used for waterways. Another mixture on high organic soils could be brome (10 lbs.) blue grass (10 lbs.) and domestic rye grass (5 lbs.). On droughty sands and on soils low in organic matter, chewings fescue (15 lbs.) is recommended with a companion crop such as domestic rye grass (5 lbs.).



Seed adapted grasses on a well prepared seed bed.

USE A STABILIZING CROP

Time of seeding is important—either early spring or preferably late summer seedings are recommended. Make seedings not later than September 15 in the southern part of the state and by September 1 in the northern part of the state. Use oats seeded at $\frac{1}{2}$ the usual rate for a stabilizing crop. If the waterway was constructed in late spring or early summer,

Grass waterways must be maintained.



broadcast 2 to 3 bushel of corn per acre for summer protection. Cut the corn 8 inches high and seed grass the last part of August. Leave the corn stubble on the surface for a mulch.

MULCH AFTER SEEDING

Spread a light mulch on the new waterway if there is danger of excessive washing. Use a strawy manure, a stack bottom, or even straw for the mulch. Then cultipack the waterway again to cover the seed and to press the mulch into the soil.

MAINTAIN A DENSE SOD

Apply manure or commercial fertilizer high in nitrogen early in the spring to promote good growth. Keep grass short by mowing. A dense sod provides an efficient liner for waterways. All livestock should be kept from waterways when the ground is wet. Hogs should not be permitted in waterways at anytime.

REPAIR WHEN NEEDED

Remove rocks, weeds, tree limbs, and other obstacles that cause concentration of water flow. The gullies in waterways can be prevented by placing a little sod in the weak places when they first develop. Repair all breaks immediately. If breaks develop in the waterway, sod, tamp down and peg down sod with stakes to prevent further damage.

PROTECT THE WATERWAY

Lift plows and straighten disks when crossing waterways. Plow at right angles to the waterway, never parallel to it. Make it easy for the water to flow into the waterway rather than to follow plow or cultivator marks along its side. Don't use waterways for a roadway.

ACKNOWLEDGEMENTS:

Pictures and subject matter were provided by the U. S. Soil Conservation Service, Region 3, Milwaukee, Wisconsin.

This publication was prepared by Extension Soil Conservationists in the Department of Land and Water Conservation. Technical consultants were provided by the Soil Science, Farm Crops, and Agriculture Engineering Departments. Printing costs were borne by the State Soil Conservation Committee.

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