

SEED HAY FOR REGRASSING ERODED LAND¹HARRY M. ELWELL,² Guthrie

Native grasses reestablish themselves slowly under natural conditions on eroded land (Daniel, Elwell, and Cox 1943), but this process can be greatly accelerated by working with nature. If the land to be revegetated is seriously gullied or sheet-eroded, special treatment will be necessary to reestablish vegetation. In some areas, it may be necessary to divert the run-off water from the original channels by installing low-cost contour furrows or ridges between and above the sources of the gullies. Satisfactory results have been obtained by then installing barriers of brush and crop residue, plowing down the gully banks, making a light application of fertilizer and lime when needed, and introducing legumes. After the legumes are established, mixtures of native grasses may be introduced. Several methods of regrassing, after the preliminary treatment just described, are being tested on the Red Plains Soil Conservation Experiment Station but this report gives the results obtained from one experiment with the application of mature hay containing seed.

EXPERIMENTAL PROCEDURE AND RESULTS

Little bluestem (*Andropogon scoparius*) was seeded in 1942 on heavy, semipermeable, severely sheet-eroded soil. A portion of the test area was planted with seed hay, another with threshed seed. The quantity of seed applied per acre was the same with both methods. The hay was applied at the rate of 1500 pounds per acre, and was pressed into the soil by rolling with a culti-packer.

The seed-hay method produced a density of grass which was 2.54 times as great as that produced from the threshed seed (Table I). By the end of the second growing season, the density on the seed-hay area was about the same as that of virgin native grass. Fig. 1 shows a gully where about 2000 pounds of seed hay per acre was applied on the left bank and threshed seed on the right, and Fig. 2 shows the same location after two growing seasons. There is only a slight stand of grass on the bank where the seed was applied, but a good stand has developed from the seed hay.

DISCUSSION

The seed-hay method of regrassing land is proving to be very satisfactory, and is probably well adapted for revegetating severely eroded and gullied land and for seeding bare areas in pastures. The mulch material protects the soil from erosion and makes conditions more favorable for the establishment of the grass seedlings. As the residue material decays it releases organic acids and food for bacteria and worms, and adds organic matter which is essential for germination and growth of the grass and improvement of the soil.

On most farms there are some wayside places along roads or meadows where native grass usually produces excellent seed. This grass may be mowed immediately after the seed matures, stacked, and spread on eroded land the following spring. If the seed crop is heavy, it may be desirable to spread the seed hay obtained from one acre over three to five acres and apply straw or other disease- and seed-free mulching material. Usually 1500 to 2000 pounds of hay and straw per acre will give satisfactory results.

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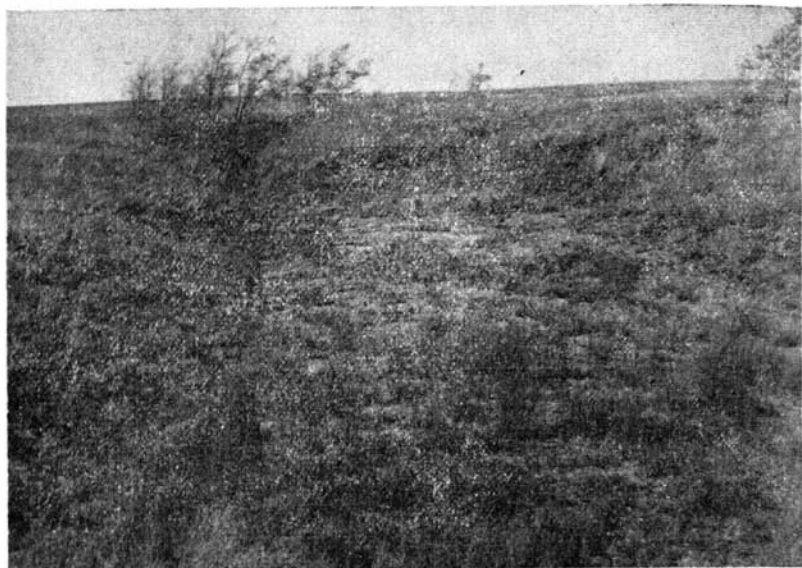


Fig. 1. On the left bank of this gully, seed hay of little bluestem has just been applied at the rate of 2000 pounds per acre. On the right bank threshed seed of the same species has been broadcast.



Fig. 2. In two growing seasons after seeding of the gully shown in Fig. 1, a good stand of little bluestem has developed on the bank where seed hay was applied. On the bank where seed was broadcast the resulting stand is sparse.

The seed hay and any supplementary mulch may be spread by hand or with a manure spreader. There is a need for improved machinery for handling such material. Regardless of the method used, it is advisable to disc or pack the material into the soil.

Land subjected to this type of revegetation, under favorable conditions, may be moderately utilized about the second or third season, but it must

TABLE I

Density of stands of little bluestem obtained on areas seeded in 1942, with seed hay and with threshed seed

Treatment	Density ^a of stand		Average Percent
	1943 Percent	1944 Percent	
Method of seeding ^b			
Seed hay ^c	7.38	9.44	8.41
Threshed seed	2.92	3.70	3.31
Virgin native grass ^d	8.13	7.08	7.61

^aDetermined by line-transect method (Canfield 1942.)

^bAmount of seed applied per acre was the same for both methods.

^cThe hay and other material used amounted to 1500 pounds per acre.

^dIncludes all palatable perennial grasses native to locality.

be protected from burning. Where the vegetative cover is poor, fall or winter mowing improves the stand and residue provides a desirable mulch.

Reports from Kansas (Anderson 1942) show that results similar to those just described have been obtained by the seed-hay method in establishing big bluestem (*Andropogon furcatus*), little bluestem (*Andropogon scoparius*), switch grass (*Panicum virgatum*), and side-oats grama (*Bouteloua curtipendula*). The seed-hay method is also recommended by Savage and Smith (1944) for special conditions in the High Plains.

LITERATURE CITED

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