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Reed Canary Grass

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A growth of reed canary grass at Ames, established from root cuttings spaced 3 feet apart each way. The area was sodded over at the end of the second season. This was 5 to 6 feet in height.

WE ARE IN NEED of a grass that is suitable for gully control and for growing in waterways. Reed canary grass seems to be the answer.

"Reed canary grass is the best grass we have found for controlling erosion in gullies and for grassed waterways," Paul Strickler and R. E. ("Bob") Bear, Appanoose County farmers living near Centerville recently told us when we visited their farms. And these men should be able to pass pretty good judgment on its value, for Paul Strickler got his start with reed canary grass 18 years ago and has been using it in gully control 9 years. Bob Bear likewise has had several years of experience in its use.

Other farmers who have given this grass a trial are coming to the same conclusion as Strickler and Bear. We believe that reed canary grass will be found of value on many Iowa farms, providing a means for controlling gullies with a minimum expenditure of labor. The grass fortunately has high value, too, for pasture and hay.

The control of gullies has become one of the most important problems on many Iowa farms because no method of control has seemed to be economically feasible. Hundreds of Iowa farmers have seen one field after another thrown out of cultivation because of gullies forming. Any heavy rain may start forming gullies on the average sloping Iowa farm.

In one county in western Iowa over 3,800 major active gullies have been reported. This does not include hundreds of small gullies recently formed which are rapidly becoming larger. The large acreage of row cultivated crops in Iowa, which has been increased in the war emergency, has contributed to the seriousness of the situation. The high intensity rains which have occurred over most of the state within the past few months have added to our difficulties.

Grassed waterways are a necessary part of any good soil conserving program. They are essential to the success of contouring, strip cropping and terracing. They provide a means for disposing of excess run-off from fields without gully formation. But the establishment of a good sod cover in these waterways is often a difficult problem. Reed canary grass seems to be the answer.
Differs in Growth Habits

You may ask: "Why is this grass better for erosion control than some of the grasses we have been growing for hay and pastures, such as bromegrass, timothy and Kentucky bluegrass? How are its habits of growth different?"

The vigorous growth of reed canary grass, its rapid root extension, the ease and rapidity with which a sod cover can be established from small root-stock portions and its ability to withstand silting and flooding make it a very valuable grass for gully control and for use in grassed waterways. This is not based on theory but on results obtained under practical conditions on Iowa farms.

Reed canary grass is a wet-land grass. It is native to Iowa. When growing wild it was always found in low, poorly drained areas. It will grow and thrive where water covers the surface through much of the year. On peat bogs and seemingly bottomless quagmires where animals bog down or do not dare to venture, the seeding of reed canary grass has resulted in a firm, strong sod over which horses and mowers and hay wagons pass with safety. Such is the strength of its sod.

But strange and almost unbelievable as it seems, we have found it to be one of our most drouth-resistant grasses when planted on upland soils. In the heat and drouth years of 1934 and 1936 it was the only grass that remained green through the entire summer on our experimental fields.

So vigorous is its growth that a small portion of underground root-stock placed at intervals of 2½ feet apart has resulted in a solidly sodded surface at the end of the second year. This may make you wonder, "If I plant reed canary grass, is it likely to become a weed pest—hard to kill out?" Our answer is "No." We have had many seedings of it under different soil conditions through a period of more than 20 years. We have always found that ordinary plowing and cultivation will completely eradicate it when this is what we want.

Reed canary grass makes an erect growth, often growing 4 to 6 feet high. The leaves are wide and seem to be rather coarse, causing one to wonder whether it has much value for pasture or hay. We have had it under observation as pasture for nearly 20 years, and records are available where it has continued under grazing for nearly 40 years. Grazing animals usually leave a stubble of 6 to 10 inches not consumed.

We have observed that horses eat the coarse appearing hay readily, preferring it to good timothy. The grass gives a large yield of hay in two cuttings per season. The second cutting is usually fine and leafy.

The grass produces seed rather abundantly, but seed prices have remained rather high. This is because the seed shatter as soon as they have ripened. If the seed is fully ripe today do not plan to harvest it tomorrow for by that time the seed will be on the ground.

Reed canary grass is not recommended generally for use for hay and pasture on well drained soils because under these conditions other grasses, such as bromegrass, in combination with legumes, seem to be superior. After a few years, reed canary grass may become sod-bound and unproductive even when grown on a fertile soil. When grown in waterways and gullies, available nitrogen is added frequently in the runoff and this condition does not develop.

A Plan for Gully Control

A small area seeded to reed canary grass—perhaps only 1/10 of an acre—will provide an abundance of root material for gully control and establishing grassed waterways on almost any farm. But on most farms this grass can well be seeded on a larger area where it not only will be available to furnish root material but also can be used for pasture or hay or to be harvested as a seed crop.

We suggest that the grass be seeded on a fertile area so located that it can be protected from grazing and still be accessible for pasture or hay crops. Often low lying land over which considerable water drains will be suitable. Plenty of rootstock material should be available for beginning the gully control program a year after seeding.

Through the cooperation of the Soil Conservation Service, seed is being made available to soil conservation districts for the establishment of small plantings of reed canary grass in the different communities. Persons interested in making a trial with reed canary grass sods in controlling gullies

H. D. Hughes in a reed canary grass breeding nursery on the Station field in 1927. Plantings of superior selections from the breeding program were made in the summer of 1944 to increase seed for distribution.
Paul Strickler standing in what was formerly a bothersome, costly gully that is now filled by planting reed canary grass rootstocks 9 years ago. The trees on the edge of the gully indicate how long it could not be crossed can secure material from these sources. It is recommended, however, that individual farmers make a small planting of this grass in order that the rootstock material may be more readily available to them.

Spade or plow a few furrows of the reed canary grass sod, depending upon the number and extent of gullies to be controlled. Cut or plow the sod only about 3 to 4 inches deep. It is the rootstocks in the top few inches that are used. We suggest that you start with the smaller gullies first. For one of these half a gunnysack of sod pieces may be enough. A chunky sod piece is not needed, only two or three stems are enough. A corn knife is a handy tool for cutting up a supply of sod pieces.

Using a spade open up a slit in the soil in the bottom of the gully for a piece of sod. Firm this in the soil with your heel. Continue planting these sod pieces a few feet apart in the bottom and on the sides up and down the gully. Be sure to extend the planting well above any over-falls in the gully. An hour's work may be all that will be required to take care of some of the smaller gullies.

Gullies with over-falls of as much as 4 feet have been controlled in this manner. We are not sure just what will prove to be the best method of establishing stands in shaped and prepared waterways. We would suggest on a trial basis that the rootstocks be distributed with a manure spreader and then thoroughly disked into the soil. Plow the reed canary sod at a shallow depth—about 4 inches or less. Cut it up with a disk for easier handling, then load it into a manure spreader for distributing in the waterway. Spreading manure at the same time is desirable. After diskimg in the manure and the rootstocks, firm the soil with a cultipacker or roller. The manure spreader has worked well in demonstrations on the Agronomy Farm at Ames.

Probably the best time to establish reed canary grass in gullies is in the late summer or early fall. Root portions put in place in moist soil in late August or early September will become well rooted before the ground freezes and be able to maintain themselves when heavy rains come in the spring. This grass has repeatedly been established at Ames from small pieces of sod placed in early September without a single failure. Establishment in gullies in the spring is also satisfactory except that the pressure of other work is usually great then.

Seeding Reed Canary Grass

This grass should preferably be seeded on moist, fertile soils. A good seedbed should be prepared as for alfalfa. Four to six pounds of seed per acre is the usual rate of seeding though in establishing small areas a somewhat larger amount of seed may well be used in order to hasten development of a good sod from which rootstocks can be obtained.

The seed may be broadcast or drilled. It should be covered about ¼ to ½ inch deep. One of the most desirable methods of seeding is to go over the field with a cultipacker or harrow before seeding; broadcast the seed; then follow the seeding operation with the cultipacker or harrow again, to cover the seed and firm the soil. An application of manure following seeding is always desirable with any grass.

Seedings are best made in the early spring though late summer seedings also have been satisfactory. On poorly drained areas where it is difficult to get on early in the spring, the seedbed may be prepared in the fall and the seed sown just before the ground freezes. Seed will germinate and start very early the next spring.

Farmer Experiences

A survey was recently made in cooperation with county extension directors, Soil Conservation Service technicians and vocational Gullies formed when this land was undrained pasture. But the gullies continued to in can be controlled cheaply by planting-
Glen Birlingmair, Appanoose county extension director, observing reed canary grass on the Paul Strickler farm. This waterway was established by planting rootstocks with a spade about 2 to 3 ft. apart.

agriculture instructors to determine the extent to which reed canary grass has been used on Iowa farms.

Replies were obtained from 59 counties. The number of farmers listed as having had experience with reed canary grass for hay was 30; for pasture, 68; for erosion control, 50; and for seed, 5. Ninety-six had been growing it on poorly drained sites and 31 on well drained sites.

We have visited a number of these Iowa farmers who have been using reed canary grass and observed the results they were obtaining.

Paul Strickler of Centerville got his start with reed canary grass 18 years ago with rootstocks from College plantings at Ames. He has supplied roots to many neighbors and friends. He first used this grass to control a gully about 9 years ago. It was impossible to farm across this gully, which was 8 or 10 feet across and several feet in depth. Reed canary grass rootstocks were put in by hand according to the procedure already suggested. Now reed canary grass has thickened up and with its coarse rank growth has collected enough silt so that it is possible to farm across this area again. But, of course, the reed canary grass will never be plowed up. The waterway will be left in reed canary grass with the assurance that erosion is under control.

R. E. "Bob" Bear, who lives 8 miles northeast of Centerville, has been transplanting small clumps of reed canary grass rootstocks in his gullies and waterways for several years. He now has reed canary grass established in most of them and is an enthusiastic supporter for this grass.

On the Lucy Lawrence farm in Taylor County we observed reed canary grass which was seeded in December, 1942, on a well prepared seedbed in a waterway. An excellent stand of reed canary grass was obtained. This grass was doing well both in a small hillside gully and in the broad, low waterway at the base of the hill. It was converting a raw, actively cutting hillside gully and a low weedy waterway into a stable, productive grassed waterway.

"The stock reach through the fence around my pond to eat the reed canary grass," says Paul Flowers, soil conservation district commissioner in Adams County. He has an excellent stand of reed canary on the banks of the dam and on the hillside adjacent to the pond. This stand was started from seed after the pond was rebuilt in 1939. It has thickened up from rootstocks. Canary grass around the edge of the pond breaks up wave action and holds the soil on the pond banks in place.

Hay, Pasture, Seed Crop

This grass also can be seeded in grassed waterways in much the same way as any other grass. It has high value either for pasture or hay. Grass waterways should always be made wide enough so that they can be mowed satisfactorily and will have sufficient capacity to carry water and handle any silt that flows into them. Cutting for hay is a good practice in the maintenance of any waterway.

Although seed is not produced during the first year, it may be harvested during succeeding years. Yields of seed of from 40 to 100 pounds per acre may be obtained. Because the seed shatters and falls to the ground almost as soon as it is ripe, the crop should be cut for seed as soon as the ends of the spikes begin to show the least amount of shattering.

Seed can be obtained through established seed channels, especially from the seed houses of the northern states. A few years ago seed sold at around $1.00 a pound. Approved methods of seed harvest have now been developed with the result that seed has generally been available at from 30 to 40 cents a pound, or in some cases even less.