Range Seedlings: Kinds that Succeed and Kinds that Fail

Cooperative Extension South Dakota State University

Follow this and additional works at: https://openprairie.sdstate.edu/extension_fact

Recommended Citation

South Dakota State University, Cooperative Extension, "Range Seedlings: Kinds that Succeed and Kinds that Fail" (1964). SDSU Extension Fact Sheets. 841.
https://openprairie.sdstate.edu/extension_fact/841

This Fact Sheet is brought to you for free and open access by the SDSU Extension at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in SDSU Extension Fact Sheets by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.
Range Seedings: Kinds That Succeed and Kinds That Fail

By E. J. Dyksterhuis, Extension Range Specialist

You may want to seed a tract back to the native grasses because of the kind of land and your grazing needs on a year-round basis.

Such range seedings are made with a mixture of the taller native grasses—those that once grew on the area to be seeded. These taller perennial natives, if once lost, are very slow to re-establish themselves. Small patches often can be seen above back-slopes in road right-of-ways, especially in range areas.

Good stands leave no room for the weedy species that become prominent after cultivation or long continued close mowing or close grazing. A full stand of the native grasses can produce more, through decades, than any other type of cover without cultivation. If not overused, stands last indefinitely.

Only strains of each kind from your climate and your kind of land can be worth the cost for a range seeding. This is true because, in the future, you will manage the seeding as native pasture (range) instead of as tame pasture. Under the range type of management, any other than local strains will in time be displaced by the slow but sure migration, and natural seeding, of local strains into all uncultivated areas. Also, do not consider range seeding until the area can be protected from grazing for two full growing seasons.

Range seedings are successfully made in three ways:

1. Full Seeding: with specially adapted drill, on largely weed-free bare or weed-free untilled high stubble seed-bed.

2. Interseeding: with range interseeder that removes plant competition from at least 7 inches of soil on each side of a drill row while leaving untilled strips between drill rows. This method is used where the entire surface should not be bare—either because of erosion hazard or because the purpose is to supplement the present stand instead of to replace it.

3. Seed-Hay Mulching: with 500 to 2,000 lbs. per acre of locally harvested native hay containing much seed. The seed-hay is scattered and merely anchored against wind movement, or fed, on bared areas or on areas having only annual weeds.

Successful range seedings often have been lost in the first year because:

- Obvious results were expected too soon, and the land was retilled.

Seedlings of native grasses are difficult to see and many seeds may not germinate until the second year. For this reason, some men with long experience do not attempt to judge a range seeding until the second year.

- A stand of weeds was permitted to reach full size and use the soil moisture that should have been saved for the seeded grasses.

Spraying for control of weeds in late summer and fall is of little help and mowing weeds in the second year will do more harm to seeded native grasses than good. Weedy range seedings require weed control when the weeds start to branch. Do not wait until they begin to flower. Mowing can benefit a range seeding only if the time-of-year and height of sicklebar permit cutting off weed tops but not tops of the seeded grasses. Where weeds are left until summer or fall, they will have pumped out the soil moisture that should have been saved for use by the grass seedlings in summer. Late mowing will cut the tops from remaining spindly grass seedlings along with the weeds.

- Livestock were turned into the seeded field in fall when grass seedlings were still somewhat green.

In such cases, livestock will, without question, graze the drill rows of grass seedlings. These are late going dormant and a bite without old growth will be grazed in preference to other areas and plants. Many seedlings are then uprooted and many others then go into winter with too little food storage and root system to survive the critical first winter.

Once established, these same native grasses are the most persistent of all plants.

Range seeding methods that often have been tried but that almost always fail (F), or deteriorate after a few years (D), include:

1. Pelleting seed and sowing from airplane. (F)
2. Seeding from airplane without pelleting, except on ash after woodland fire. (F).
3. Sprinkling seed on thin portions of fully used pastures. (F)
4. Seeding of warm-season native grasses with heavy application of nitrogen. (F) (Weeds benefit more than slow-starting seedlings of these grasses.)
5. Interseeding annuals into native perennials. (F or D).
6. Interseeding a low-growing perennial into a cover of taller perennials. (D).
7. Interseeding a domesticated species into native range or meadow in top condition. (D).
8. Interseeding species and strains native to the eastern prairie into the drier plains grassland. (D).
9. All seedings of strains that came originally from native stands much further north or south, or from extremely different soils. (D)
10. All types of range seedings that cannot be protected from grazing during the first and most or all of the second year. (F)

Range seedings are being successfully made in all four quarters of the State. Moreover, some seed of native grasses is available with original source in each of the four quarters or within 200 miles in an adjacent state. Yet, it is probable that range seeding on a field scale has not yet been attempted in more than one-half of our counties.

LONG TERM CONSIDERATIONS

The oldest range seedings were made following the drought of the 1930's in connection with programs for revegetating land submarginal for crop production. Some seedings of native grass made 30 years ago, now blend so perfectly with adjoining native ranges that few people are aware of them. Others where native grass seeds from native stands hundreds of miles away were used, are still unsatisfactory. Much land seeded to crested wheatgrass at that time is still productive but some produces less than native range in good condition and most is now in need of renovation or replacement.

Many of the poorer fields planted more recently to domesticated forage grasses under the conservation-reserve-plan must now be tilled because, although the term has expired and grazing is permissible, these domesticated plants are no longer productive. Only the better fields will repay use of fertilizer to improve and maintain production.

Had seed been available and had the poorer fields been seeded to the local native grasses 5 to 10 years ago—these fields could now be permanent range in excellent condition. This would have given the owners the alternative of either returning to cultivated crops or extending range livestock operations with permanent native pastures in the highest condition and with only the costs of range management.

INCOME CONSIDERATIONS

It is true that a range seeding means loss of grazing from the seeded area through two growing seasons and preferably also the first winter. Tame pasture plantings can usually be grazed the second growing season but are of little value for winter use. Loss of grazing during establishment of a range seeding is usually small because areas selected for range seeding are usually contributing very little per acre.

Profits from grazing lands depend upon cost to produce a pound of product—not pounds of forage or product produced per acre. A range seeding may produce annually only 20 to 60 pounds of livestock gain per acre, depending upon soil and climate. But once established, the costs are very low if the land is not taxed too heavily. The finest, most intensively—and expensively—managed stands of improved domesticated forage plants may produce up to 600 and more pounds of livestock gain per acre annually. Yet, in one such comparison, the gain was costing 12 cents per pound on the native pasture while on the tame pasture it was costing 16 cents per pound. Thus, even with 10 times the yield per acre, the tame pasture was less profitable. This indicates why we may see much land in native grasses where slopes, soil depths, and available “improved” varieties of forage plants might suggest converting range to tame pasture.

Some of this land indeed could profitably be converted from range for an early spring tame pasture of crested wheatgrass and a late fall tame pasture of Russian wildrye. This could extend the period of high gains. But greater production of forage or animal gain on a per-acre basis is, by itself, a misleading basis for deciding between range seeding and tame pasture planting.

WHAT IS THE TREND IN RANGE SEEDING

It is of interest that more land is being returned to native grasses than is being broken from native grasses for other types of pasture. This trend accelerated sharply in the past few years with increase in commercial quantities of seed of local strains of such native grasses as western wheatgrass, green needlegrass, switchgrass, indiangrass, sand bluestem, and locally harvested mixtures of the warm-season prairie grasses, primarily bluestems.

Up to now range seeding has been too largely with only western wheatgrass and green needlegrass; but the seeding of warm-season mixtures is increasing rapidly. The former are ideal for fine textured uplands westward but the latter are needed on coarse textures westward and on fine textured uplands eastward.

This trend toward more use of warm-season natives may be expected to accelerate as supplies of these seeds increase and as local strains of big bluestem, little bluestem, switchgrass, indiangrass, sideoats grama, and prairie sandreed come into production from fields for seed increase. Also fostering seeding of native grasses is the recent introduction of seeders that can plant these small and often fluffy seeds without clogging and at a uniformly shallow depth with seed in very firm contact with the soil. Such seeders, however, are still lacking in most parts of South Dakota.

Range seedings also are being used effectively to reduce weed control, benefit wildlife, and to add scenic variety on road right-of-ways, particularly the broad outer bands along interstate highways west of the cornbelt.
WHERE TO BUY NATIVE GRASS SEED

To buy seed of strains suitable for your land is a far greater problem in range seedings than in tame pasture plantings. The address of the seed house or the “origin” given on the seed tag can be misleading when buying seed for range seedings.

Great care must be taken to seed only strains of each kind that came originally from your area. For example, seed houses in several states have seed of side oats grama for sale that they grew or bought but which was first collected for increase from a native stand in a quite different climate. The strain name on the price-list, or a note like “original source W. S. Dak.” if given can prevent buying a strain that will not succeed in your area. Thus, there are many strains of side oats grama seed for sale. Coronado originated in New Mexico, El Reno in Oklahoma, Trailway and Butte in Nebraska, but Pierre side oats is the only one now in the trade that originated in South Dakota. It was first collected from a native stand near Pierre. Only it and other local strains should be used in South Dakota. For this purpose the Nebraska strains would be considered “local” near Nebraska.

Seed harvested or seed-hay gathered from natural stands on nearby similar soils are, of course, certain to be perfectly adapted strains for your seedings.

Many unadapted strains will “come up” and may be more leafy (if from south) or earlier (if from north) than the native strains. But, they will not be able to volunteer new plants from seeds and under-ground stems as rapidly as the local strains of the numerous local weedy species you had hoped to replace.

The importance of using seed from an original source not more than 150-200 miles north nor 250-300 south, with comparable rainfall and soil, has been shown repeatedly in stands 5 to 10 years old.

remember

You can get a stand by Full Seeding, Interseeding, or Seed-Hay Mulching. One or another method will best fit your needs. Interseeding must be followed by years of careful management even after establishment in strips.

Use a drill or interseeder designed specifically for seeding native grasses. These seeds are smaller, often hairy, and require extremely firm contact of soil with seed at shallow depth.

Don’t waste money by seeding where you can’t protect from grazing for at least two full growing seasons—or where if necessary, you can’t control spring weeds early the first year.

Range seedings when established can be stocked no heavier than native range and produce no more than native range. However, this will be more profitable than weeds. On lower value lands, range seedings often can be more profitable than tame pasture plantings because of low costs. Profit depends on cost to produce a pound of animal gain instead of pounds of forage or gain produced per acre. This is the reason we see much land in native grasses where domesticated pasture plants could be seeded but where maintaining their higher yields would not repay costs.

For range seedings, insist upon knowing that the seeds you buy are strains that can persist and crowd out weeds in your climate and on your kind of soil. Western wheatgrass seed for sale in South Dakota may be originally from here or from Colorado or western Montana. Only the South Dakota strain among these three will please you in central South Dakota 5 to 10 years from now. It makes little difference where the seed-increase field was located; often given as the “origin” on seedtags. Although this “origin” is adequate for domesticated crops—which we expect to replant—for range seedings you must know the original source of the seed because only there did it grow in natural competition through good years and bad for centuries, instead of in rows under cultivation for seed production.

Once established, range seedings require no more maintenance than adjoining rangelands. Keep range (native pasture) and tame pasture fenced separately to control needed difference in time and amount of grazing.

For professional help in finding suitable seed and equipment; in planning dates and rates of seeding; and for checking seed-bed, seeding, and results, contact your County Agricultural Agent or other range specialist.
This is one of five new Fact Sheets for ranchers and livestock farmers, specifically aimed at common problems of ranges and tame pastures, published by the Cooperative Extension Service of South Dakota State University, Brookings. Titles of these are:

**“Proper” Range Use:** How To Rate Use on Your Native Pastures.

**Reseed Native Range Grasses? or Plant a Tame Pasture?**

**My Rangelands:** What Kinds? How Good?

**Range Seedings:** Kinds that Succeed and Kinds That Fail.

**Graze Longer and Feed Less Roughage:** Systems to Balance Native and Tame Pastures With Seasonal Needs.