

Needle-and-Thread Grass— Know It and Use It

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The story of the western range written as a chapter in the history of the land areas in the United States would be a dark and tragic tale.

Known at first chiefly as a wide and desolate obstacle to the gold fields, the "Great American Desert" became suddenly the source of other great wealth—livestock. Efforts to capitalize on the natural vegetation of the Great Plains area resulted in widespread range depletion.

The gloomy, historical view of the poor management practices once accepted procedure on the western range is shot through with bright rays of good range management practices that have brought about the rehabilitation of some areas and the protection of others.

Grass problems of the western ranges have been investigated by those of scientific inclination or interest. However, many of the findings of these investigators are not common knowledge to those who face the problems in their everyday living. To prove effective, these results must be broadcast to all people concerned with the range and the animals that graze it. It is important for those who make their home as well as their living on the range to know the kinds of grasses present, their growth habits and their management.

With the lack of knowledge about individual range plants there exists considerable misunderstanding about the values of some species. One grass usually discussed in violent pro and con terms is needle-and-thread (*Stipa comata*) or, more commonly, needlegrass.

Needle-and-thread holds the dubious honor of probably being "the grass most likely to be in bad

repute." Resentment of stockmen is at a peak during the seed-maturing season when the needle-like barbs of the seed spear anything within reach. The seed-maturing period lasts only two or three weeks during the early summer after which the seeds drop to the ground where they cause little trouble.

Sheepmen are those most concerned with the piercing ability of the seeds of needle-and-thread. The barbs not only pierce the eyes of sheep and blind them, but work their way through the fleece of the animal and penetrate the skin, often destroying the skin's usefulness and making necessary considerable trimming of the carcass. Buyers impose price reductions on lambs suffering injuries from needle-and-thread. Even though economic loss is not apparent, barbs that have penetrated may

prevent the lamb from putting on normal gains on the range or in the feed lot. Accurate statistics are lacking, but claims of heavy sheep loss are thought to be exaggerated.

The only practical solution seems to be to keep sheep off range abundant in needle-and-thread during the seed-maturing period, just as one would keep stock from grazing certain poisonous plant areas at the time when their effect may be disastrous.

Needle-and-thread is found throughout the Great Plains area and is known to extend as far north as the Yukon and south into Mexico. It is a true native of the Great Plains, and not, as sometimes thought, an immigrant from another region. Fossil specimens show that the species has inhabited the Great Plains since the Tertiary geological epoch—or for about 25 million years. Present-day needle-and-thread is found to bear striking resemblance to its age-old ancestor. The grass has been recognized as a climatic dominant over wide areas of the Great Plains.

Needle-and-thread is rarely found in pure stands in large

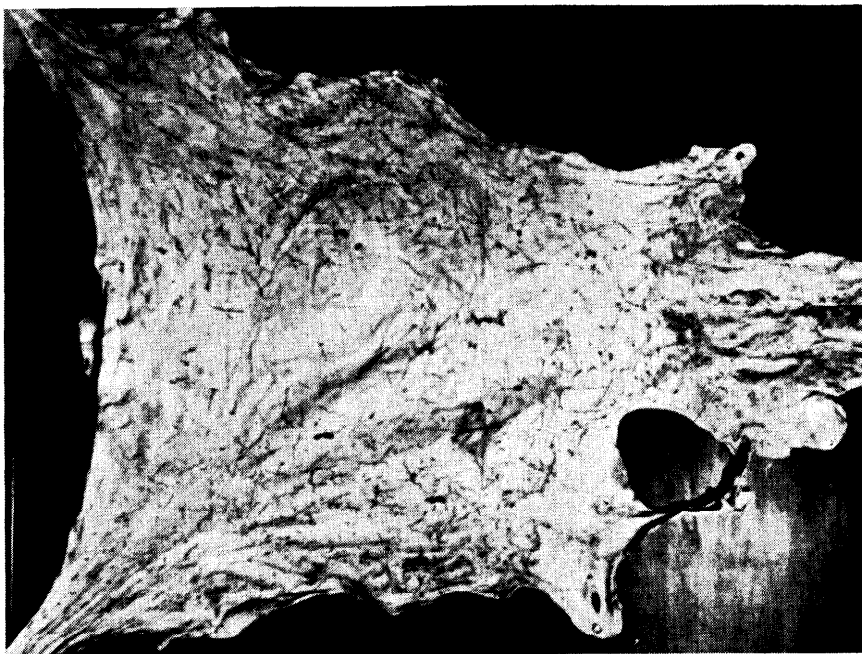


FIGURE 1. Sheep hide showing damage caused by barbed seeds of needle-and-thread grass. The sharp seeds work through the fleece and penetrate the skin, causing considerable damage to the carcass in severe cases.

areas, although it is not uncommon to find it in small communities comparatively free from other associates. It is usually found with blue grama (*Bouteloua gracilis*) and western wheatgrass (*Agropyron smithii*). Needle-and-thread is found abundantly on well-managed range lands or on areas long under protection from livestock, and sometimes on abandoned lands returning naturally to perennial vegetation.

During the years of plentiful spring rainfall it is apt to dominate the scene, as it is of northern derivation and comes up early to mature and scatter its seed before dry summer weather. In the seasons when more rain falls during the summer, needle-and-thread is not as prominent as later-growing grasses.

In its undisturbed natural habitat, needle-and-thread is usually found on better-drained, medium-textured or gravelly soils. In better-watered lowlands and swales it tends to give way to western wheatgrass and similarly to the short grasses in more arid upland.



FIGURE 2. Trimmed sheep carcasses alongside an undamaged carcass. The trimmed carcass losses are attributed to the penetration of needle-and-thread seed to the meat. Sheep may be blinded by seeds entering the eyes and sale value lowered by seed penetration of fleece and hide.

During dry years, it moves into draws and swales with western wheatgrass and in wet years invades the domain of the short grasses in more arid spots. Needle-and-thread is equipped to act as a crisis plant and can take over the disturbed areas of either sands or heavy clays. Its special equipment—the barbed shaft which readily attaches itself to man or beast—allows it to travel into barren areas more readily than its less mobile neighbors. Wind will carry the awn-bearing seed for short distances. After the barb settles on the ground, it works into the soil by means of the attached awn. This seeding device gives needle-and-thread a decided advantage over most other plants in invading and establishing itself on new sites.

Needle-and-thread plays an important role in the economy of the range land as a forage crop. Were it not for its seeding habits, it would find great favor with stockmen. Because of early spring growth, it furnishes timely early green feed to lambing ewes and calving cows in need of succulent grazing for milk production. The grass is relished by livestock until time of seed maturing when it is by-passed for more tender summer grasses.

During late rainy autumns it greens up and remains so until snow falls. The dry leaves and stalks are good sources of winter feed for cattle and sheep, particularly during snows when short grama and buffalo grasses are covered. Native hay produced from it compares favorably with western wheatgrass hay. Needle-and-thread should be cut before maturity if it is to be used for hay as it would be unsuitable for feeding if the barbed seeds were present.

Overgrazing, as well as drought, tends to have disastrous effects on needle-and-thread. Wyoming clipping experiments, comparable to very heavy grazing, showed a drastic decrease in the species and very poor growth in those plants that survived clipping. Unlike

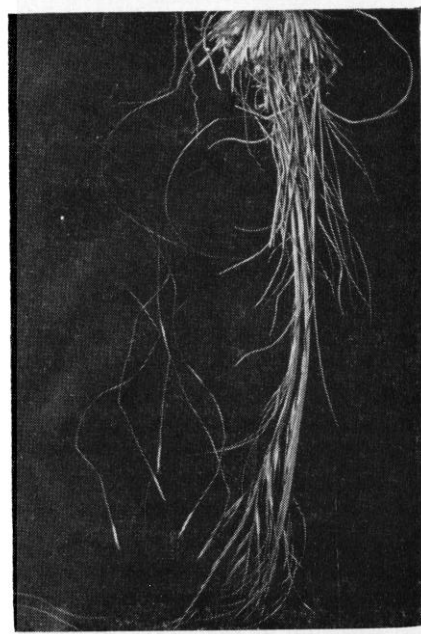


FIGURE 3. Needle-and-thread grass showing the awn-bearing seed.

blue grama and buffalo grass, which yield more when clipped frequently, mid-grasses, including needle-and-thread, gave greater yields when clipped only once at the end of the season. In the same experiments, needle-and-thread was found to rank second only to western wheatgrass in ability to start new growth after clipping.

That overgrazing brings a reduction of needle-and-thread evokes no particular sorrow from stockmen. But it is important to know that when this grass is removed by overuse on ranges where it is a natural member of the original vegetation, the forage resource is probably reaching the critical point from which deterioration may quickly set in. On these ranges needle-and-thread can be used as a sign-post, as its recession is the first indicator of range deterioration.

After 35 million years, this hardy Great Plains native is probably here to stay. Though needle-and-thread has undesirable qualities during its seeding season, a better understanding of the grass itself will point the way to advantageous use of the plant.

Under proper management needle-and-thread can be used for valuable and timely forage.