Range Reseeding By Airplane Compared with Standard Ground Methods

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Many of the principles governing successful range reseeding are now known through a long series of experiments, but seeding deteriorated range lands to obtain greater forage production is still an enormous task because of the vast acreages involved. The airplane has recently been enlisted in an attempt to seed more acres more rapidly and to seed areas not accessible by ordinary ground methods.

Techniques for sowing seed on range lands by airplane are still in the experimental stage; data are necessarily meager because of the recency of most airplane seeding trials and the high cost of a single experiment. This paper describes the ground methods which have so far been found successful on range lands and the relative success of comparable airplane seeding from the experimental data and experience which are available.

Seeding by Standard Ground Methods

Since 1935 a systematic program of research into suitable species and methods of range reseeding has been in operation in the Intermountain Region. Studies were at first concentrated in the general ecologic zone occupied by sagebrush. Since 1944, they have been extended into the next higher zone—mountain brush and aspen. A few have also been made in untimbered high country. Recommendations on reseeding derived from research conducted in the sagebrush zone have made possible a well-based program of “action” seeding. There is still great need for knowledge about methods suitable for various subtypes in the broad sagebrush zone and about the value of newly introduced species and improved strains of old species.

Many findings for sagebrush range were suitable on mountain brush range lands. However, methods of treatment were necessarily different because the brush is different. A number of species not suitable in sagebrush areas proved highly adaptable in the mountain brush-aspen zone. More than 350 species were collected and evaluated as adapted species. Only a few of these that also had seed available in quantity were found to be suitable in any one zone, totalling about a dozen for all zones.

Various methods of distributing and covering seeds, drilling, were investigated. It was found that broadcasting alone was the most effective method. Broadcasting without a treatment to cover the seeds was not at all successful except on limited areas where covering occurred by natural means.

Stands and Herbage Production

When 6 to 12 pounds of grass seeds per acre is used by standard methods, on both sagebrush and brush-aspen ranges, good stands of grass are often attained. This is from 40,000 to 50,000 plants per square foot, but a stand of five per square foot is the minimum satisfactory stand. The capacity for good seeded sites in the sagebrush zone is around 3 to 5 sheep months per acre. The mountain brush-aspen zone yields about half as much grass as the ones listed in the table, with a capacity of from 15 to 20 sheep months per acre.

What has been accomplished by reseeding can be shown by the data from 10 large areas as given in Table 1. Many other large reseeded areas were as much grass as the ones listed in the table, but it is difficult to get actual herbage production data while they are being used for grazing.

The ratio of grass produced on the seeded areas compared with that produced on similar unseeded areas varies from 8 to 50 times more. The rate of increase between 15 and 20 times as much. Occasional failures, which lessen the average, are some failures, which lessen the average, 10% of the seedings properly made, however, fall so far short of success as to be failures on the whole. When these are also counted the herbage production is 12 to 15 times as great on seeded areas as on unseeded ones.

Removing Brush Competition and Cover

The high degree of success attained in large-scale seedings depended on the various steps in the operation being performed according to proved practices. Removal of sagebrush, for example, needs to be fairly easy. Many species not suitable in sagebrush areas proved highly adaptable in the mountain brush-aspen zone. More than 350 species were collected and evaluated as adapted species. Only a few of these that also had seed available in quantity were found to be suitable in any one zone, totalling about a dozen for all zones.

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