

WHICH GRASS IS BEST?

By W. M. JOHNSON

Rocky Mountain Forest and Range
Experiment Station

RECENT EXPERIMENTATION IN grass seeding has shown that several different kinds may be successfully used to revegetate abandoned farm and depleted range lands in the ponderosa zone of Colorado (Figure 1). Many visitors to the Manitou Experimental Forest (a branch of the Rocky Mountain Forest and Range Experiment Station, maintained by the U. S. Forest Service in cooperation with Colorado A & M College, Fort Collins, Colo.), near Woodland Park have asked, "Which grass is best?" To answer the question we have considered growth characteristics of the grass, adaptability to elevation zones, rainfall pattern, site conditions, needs of the operator and what he wants to accomplish with his reseeded. Much of the success in reseeded depends on these factors and each operator should evaluate them all, and especially the last one, careful consideration.

Things to Consider

One of the most important things to consider in planning the reseeded pro-

gram is what is needed most to round out the year-long feed supply and lick the feed problem on the ranch. Is hay needed for winter feeding, or grass for pasture? Is early or late pasture needed? Some grasses are better for hay, some for pasture and some for spring forage, while others are best for late fall use.

Once the need for the seeding has been established, important items to consider are the elevation and climatic conditions under which the planting will be done. High elevations are usually associated with cold winters. Obviously you would not plant a low-altitude, warm-season grass, such as sand lovegrass, at high elevation. Moisture too, is important. In general, the brome grasses require more moisture than the wheat-grasses. Temperature in relation to the growth characteristics of the grass is also an important factor. Some grasses, such as Russian wild-rye or big bluegrass for instance, can begin growth early in the spring, sometimes even before the snow has melted. Others, like blue grama, require relatively warm weather.

The site conditions on the areas to be planted deserve careful thought. Valleys

or swales usually have deeper soils and more moisture than the uplands. They should usually be reserved for high-producing hay crops. Brome grasses and legumes might do well under these conditions even in low-rainfall areas. The higher, drier uplands are probably best adapted to pasture grasses.

After these factors have been carefully considered the final selection of a grass will depend upon the growth requirements of the grass and upon the needs and conditions of the operator. All grasses have some advantages and some disadvantages. The following information obtained at the Manitou Experimental Forest and from other reseeded trials will help answer the question "Which grass is best?"

Beardless wheatgrass, a native of the United States, furnishes very good pasture on dry sites but seldom grows tall enough for hay production. The establishment of stands is slower and more difficult than with crested or intermediate wheatgrass but once established it makes excellent summer pasture. It is a big bunchgrass with a dense growth of basal leaves. Best results have been obtained on dry sites at the intermediate and higher elevations.



Figure 1. Research has developed and tested methods and species to use for reseeded depleted ranges and abandoned farm lands. This mixture of crested wheatgrass and smooth brome produced 1,010 pounds of air-dry grass and 60 pounds of beef per acre at the Manitou Experimental Forest in 1950, a year when production was about one-half of normal.

April, 1951

Crested wheatgrass, well known and well adapted throughout the ponderosa pine zone, is easily established, makes a vigorous growth, produces high yields, is drouth-resistant and will withstand fairly heavy grazing. Since it is slow to fill in between the rows, the original stand should be planted thickly enough to give full coverage. Under drouth conditions height growth may not be sufficient to justify cutting for hay, but excellent pasture will be available. Best results have been obtained at low and intermediate elevations on the drier sites. Good stands have been obtained above 9,000 feet but yields are usually low.

Desert wheatgrass is closely related to crested wheatgrass and has similar

characteristics. Supposedly it is more drouth-resistant, but in our work we have found little reason to use it for range reseeding.

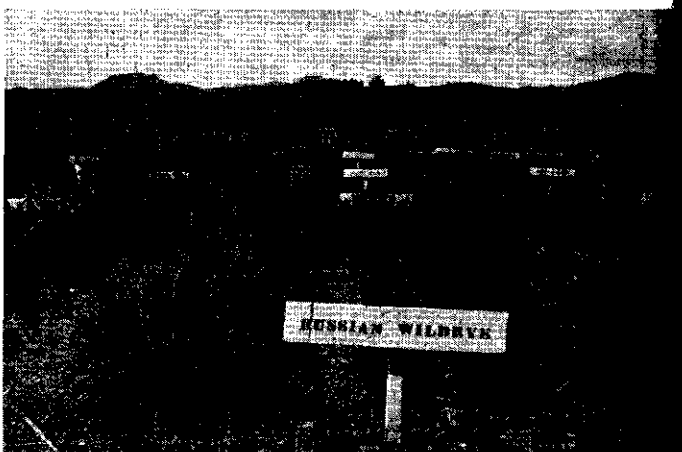
Intermediate wheatgrass is rated among the best of our grasses for range reseeding because of easy establishment, rapid growth, high yields and palatability to livestock. Pasture, hay or seed production are possible uses. Vigorous rootstocks permit rapid spreading and increased ground cover. It remains green much longer than crested wheatgrass and, therefore, makes good feed for a longer period during the year. Excellent stands have been obtained at both high and low elevations. Neither winter nor summer drouths have caused serious damage to the stands. At the

present time the high cost of seed makes planting expensive.

Pubescent or stiffhair wheatgrass is very similar to intermediate wheatgrass. In other regions it has been found easier to establish under dry conditions but in our work the two species are very nearly identical in all characteristics.

Siberian wheatgrass is very similar to crested wheatgrass, has the same characteristics of growth and palatability and can be used under the same conditions as crested wheatgrass.

Slender wheatgrass, a native to the ponderosa pine type, is easily established and grows very rapidly for a few years. Since other plants usually crowd it out, we do not recommend it for long-time range reseeding. Pasture-crop ro-



All grasses have some advantages and some disadvantages. The grasses in this group are among the best for planting the ponderosa pine zone.

offer the best possibility for its

all wheatgrass is a very robust, tall, high-yielding species that in areas has been found very palatable to livestock. Establishment and growth are rapid and vigorous but during the winter of 1949-50 our stands were killed by the cold, dry weather conditions. These conditions may have been exceptional and may not occur but the use of tall wheatgrass for feeding in this area is now problematical.

Spikespike wheatgrass, a palatable, forming grass native to the United States grows well on moist sites (mesic) in the lower, drier elevations. It is a pasture grass, it seldom grows enough for hay and is usually planted in a mixture with other grasses.

Western wheatgrass, a native to the ponderosa pine zone, is very palatable to stock, and grows fairly well at both high and low elevations. On moist sites in wet years it may produce enough to be cut for hay but ordinarily its best use is for pasture. The thick, fibrous rootstocks withstand drought conditions exceptionally well—extreme drought may prevent any surface growth but the rootstocks will stay alive. The grass is not very viable and in order to get good stands larger quantities must be used.

Meadow brome is a very good grass for planting at higher elevations where it appears to be better adapted than other brome. In volume production it is exceeded by the better wheatgrasses. Smooth brome, well-adapted throughout the type to areas of average moisture or above, has been widely used and well liked for reseeding purposes. It is a very heavy user of nitrogen and in six to eight years loses its vigor in production because of nitrogen deficiencies. Although an excellent grass for both hay and pasture, it does not produce as much volume as crested or intermediate wheatgrass. Its best use is undoubtedly for hay when mixed with alfalfa and planted in moist situations. Orchardgrass has been one of the better producers, especially at higher elevations with average or better moisture. Winter kill during 1949-50 indicates that it should be used with caution until more data are available.

Russian wild-rye is a very desirable species to use in a planned pasture program to fill the gap between winter grazing and summer grazing. At Manitou it is ready for grazing from two to three weeks earlier in the spring than crested wheatgrass. Growth consists of an abundance of long basal leaves but no flower stalks. Its chief use, therefore, is for pasture, as it seldom grows enough for hay production. Excellent stands have been established under most all conditions.

Sand lovegrass did well on some mesas and if it does not winter-kill, it may be useful in the southern part of the lower ponderosa pine zone. Where

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Cattle Rustling—1951 Style

By J. EDGAR HOOVER

Director, Federal Bureau of Investigation

IT IS A VIOLATION OF FEDERAL law knowingly to transport stolen cattle in interstate or foreign commerce.

The federal statute, which is known as the National Cattle Theft Act, makes it possible for the federal government to step in and assist the local authorities to cope with the problem of the modern-day cattle rustler.

The passage of the act grew out of the fact that cattle rustlers themselves have adopted new methods and procedures in their criminal activities. No longer is it a case of cutting out part of a herd and effecting the theft with blazing six-shooters and fast horses as characterized the rustlers of the old West. The modern rustler has swapped his horse for a fast truck and is prepared to take advantage of rapid highway and rail transportation to distant markets.

It is this element of speed and the possibility of operating over great distances which brought about the enactment of the federal law. Today's rustler may steal the cattle during the night and by morning be far away from the scene of his crime, and outside the jurisdiction of the local authorities who have the primary responsibility of detecting the theft and bringing the thief to justice.

In one such case investigated by the FBI, it developed that the rustlers employed two large trucks which they operated along the highways at night. Their system was to "hunt" cattle grazing along the shoulders of the road. When such cattle were found, they were loaded into the truck and transported to a barn where they were kept until sold at auction or otherwise disposed of.

THE federal violation grew out of the fact that the cattle were generally stolen in one state and transported to a barn located in another state.

As a result of the fact that generally only one head of cattle was stolen from any one farmer, each quite naturally concluded that his animal had merely strayed; and usually considerable time elapsed before he realized a theft had occurred and brought the matter to the attention of the authorities.

Under the terms of the National Cattle Theft Act, "cattle" is defined as one or more bulls, steers, oxen, cows, heifers or calves.

The term "interstate or foreign commerce" includes transportation from one state into another state, territory or the District of Columbia.

The act provides a maximum penalty of a \$5,000 fine or five years' imprisonment, or both. In many regards it is patterned after the Federal Interstate Transportation of Stolen Motor Vehicle laws.

In addition to covering the activities of the rustler, the act also provides that whoever receives, conceals, stores, barter, buys, sells or disposes of cattle moving in interstate or foreign commerce, knowing the same to be stolen, is subject to the same penalty.

A CASE of cattle rustling which involved two brothers and which occurred in Colorado was first brought to the attention of the FBI by a Colorado brand inspector.

One day the brothers found several strays from an adjoining ranch in their pasture. They corralled the strays and changed the brand to their own. This worked so successfully that one of the boys decided to make it easier for the strays to come over to his land by lifting a section of the fence which separated the two ranches. Some half-dozen additional head came through. This was repeated several times until the brothers had corralled and rebranded more than 100 head of the neighbor's cattle.

In order to dispose of the cattle quickly, they were transported to a ranch in Kansas approximately 250 miles away.

A federal grand jury at Denver indicted the brothers for violation of the National Cattle Theft Act. Both pleaded guilty and received sentences totaling eight and one-half years. During the course of this investigation by the FBI, 51 head of cattle were recovered and numerous petty thefts were cleared up.

ANOTHER system used by modern-day rustlers is illustrated by a case which occurred in North Little Rock, Ark.

This case was first brought to the attention of the FBI by a representative of the railroad police who reported to the Little Rock office that, during a period of several months, a total of 90 head of whiteface calves had checked short in shipments from Texas to the stockyards at East St. Louis, Ill.

The railroad had been receiving claims for one, two and three calves at a time, and finally a claim came through for 27 calves out of a shipment from Houston, Tex.

It was the custom in handling the cattle shipments between Texas and East St. Louis to use the resting pens in North Little Rock where the cattle were unloaded from the cars and watered before continuing the journey north. This was the only resting pen utilized for the shipments in which the losses were reported.

AN investigation conducted by the FBI in cooperation with the railroad police resulted in the development of information indicating that an employee of the resting pens had been selling cattle to several retail outlets in the area

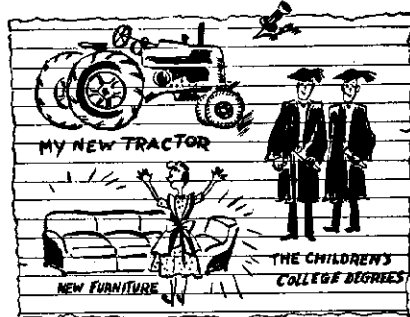


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BEST GRASS

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adapted, it produces an abundance of herbage.

Meadow fescue establishes easily and grows very rapidly but does not persist on dry sites in this area and is gradually crowded out by other species. It also killed during the winter of 1949-50.

Red fescue and sheep fescue are grasses that can be used for reseeding where an abundance of fine basal leaves and a good volume of roots are desired. They are slow to establish, produce relatively small volumes of feed. Perhaps their best value is soil cover.

Big bluegrass is a good grass to consider in a planned pasture program but is slower and more uncertain to establish than many of the other grasses. Because of its ability to grow and remain green late in the fall, it is excellent for late fall grazing. At Manitou it has two definite periods of growth: an early spring growth when seedstalks are produced, and a late fall growth which is mostly foliage. In normal years 10 inches of green growth have been observed in January. In the spring, when the ground is soft and moist, the shallow rooted plants are easily pulled up by livestock—so spring grazing should be attempted with extreme caution.

Nine Months of Green Grass

On the basis of experimental results and observation of other seedings, it is believed that in most of the ponderosa pine zone a planned pasture program can result in green feed for a nine-month period each year. Russian wild-rye is usually ready for grazing about the first of April. Cattle can then be moved to crested wheatgrass about the first of May and on to native bunchgrass ranges about the first to the middle of June. In early September, the cattle can be moved to intermediate wheatgrass, then to native meadows, and finally to Russian wild-rye and big bluegrass pastures. Under these conditions the cattle can be on green feed from April through December with little need for supplemental feed except during heavy snows.

Yellow sweetclover or some other legume which is adapted to the site should be added to every grass planting. Where adapted, yellow sweetclover produces abundantly for two or three years. Generally the soils in the ponderosa pine type are deficient in nitrogen and a legume is needed to maintain the fertility of the soil. Commercial fertilizers are expensive and barnyard manure is seldom available. Although sweetclover gradually disappears from the stand, the increased early production and the increased fertility of the soil make the addition of such a legume worth while.

An Answer

Careful consideration should be given both to the areas seeded and the kind of grass used. Before going too far in

planning, why not visit the nearest experimental area and see the different kinds of grasses growing side by side? Your own observations of the grasses can then be fitted into growing conditions on your ranch to help select the grass that will grow best and do the job. There is no one best grass; it depends on the individual and his own needs and conditions.

WHERE TO GET SEED

Wondering where to get seed of suitable range grasses? Or, are you looking for buyers for your product? The U. S. Southern Great Plains Field Station at Woodward, Okla., has compiled a list of 92 concerns that are either buyers or sellers, or both, of the seeds of 23 different grasses. Copies of the list may be obtained from the station.

ARMOUR TO PROCESS BLOOD FOR ARMY AT FORT WORTH

Armour & Company is constructing a \$850,000 blood processing plant at the Fort Worth plant, according to a recent release. The firm will operate the plant for the army, processing blood collected by the Red Cross throughout the Southwest, the South and some of the southeastern states.

FAST-PROCESS MILITARY ROAD

Scientists at Princeton University and the Massachusetts Institute of Technology have developed for the army and navy a process for making surface roads out of sand and clay in a matter of two hours, using a resinous chemical substance which is mixed with the sand and tamped down. It is expected to be of especial value in the building of air strips.

INCOME STABILIZER HINT

A research report published by the North Dakota Agricultural College at Fargo evaluates various measures available to wheat farmers of the state to protect them financially against lean crop years. Generally, the report declares, if farmers use crop insurance along with a modest savings program they stay out of the red. Under such combination, it is estimated there would be no years with negative incomes.

NEW ITEMS

Something new for firearm owners—a Rust-Pruf Gun Pouch in which guns or tools may be stored safe from rust and corrosion. The pouch is made of clear plastic, 9 inches wide and 53 inches long; \$1 each; 6 for \$5; The Hood Company, Los Angeles, Calif.

Two men in Phoenix have perfected a range reseed that hangs on an animal's neck like a cowbell. Every time the animal lowers his head to graze, the "bell" emits a seed or two.

AMERICAN CATTLE PRODUCER

AGENCIES MERGED NEW LIVESTOCK GROUP

A new agency, to be known as Live-Conservation, Inc., will mark the consolidation of the National Livestock Prevention Board and the Live-Sanitary Committee. Offices of the group will be in the Livestock Exchange Building at the Union Stock Yards, Chicago. The governing body will be a 45-man board; Dr. J. R. Pickens will be general manager.

ANGOLA GRASS SURVIVES COLD

Angola grass, a prolific livestock feed which was introduced in the southern part of Florida several years ago, has pleased everyone by withstanding the usual cold, and even snow, of the winter season. Previously grown only on a limited trial basis because it was not expected to react well to wintry weather, the grass is now being favorably considered for widespread use.

MARKETS

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Prices will come down. A rollback in prices for fat cattle will result in lower prices for replacement stock. Hog receipts have shown a tendency to slacken and within another month lighter supplies are assured. Although hogs are relatively low compared to cattle and lambs, the market showed considerable fluctuation and closing prices were at the lowest level for the month. The percentage of sows has been heavy.

Heavy Hogs Down

Closing prices for barrows and gilts were 75 cents to \$1.75 lower and sows which generally displayed comparative strength closed around steady to 25 cents lower. Shipping demand was fairly good in some markets and moderate elsewhere, but stormy weather having considerable influence on where the shippers put in their appearance. At the high time in the week, some butchers sold up to \$22.75. In most sessions found best hogs sell below \$22.50 and at the finish the average was \$22.15. Only light sows sold at \$17.50 and above, while the big weights were most numerous at \$19.25 to \$19.75. Not many lambs are left in northern Colorado as the movement of the small number in that area has been steady since before the first of the year. It is a little early for spring lambs to move in any volume, although the first Californias of the season moved through the Denver gateway at mid-March. Fed lambs are not very numerous in other feeding areas so that the only way price break is to have the market become heavy. Sometimes when prices get high the size of the supply has little influence.

Spring lambs are selling below old-year lambs, mainly because of the difference in pelt credits. Some spring lambs in "River" markets have sold at \$39 to \$45.00 but most sales were at less money

although frequently old-crop wool lambs have passed \$41.75 at several markets. Both woolled and shorn lambs hit new all-time highs at the close.

Wool Needed

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