



RUSSIAN WILD RYE

Row plots of Russian wild rye growing in the Manitou Experimental Forest. Plants here show the bunchgrass habit, the abundant basal leaves and erect, naked seed stocks common to Russian wild rye.

Don't Overlook Russian Wild Rye

by D. F. Hervey and W. M. Johnson*

Have we been overlooking a good bet by not using more Russian wild rye in our range reseeding programs? The drouth of the past few years has proved the ability of Russian wild rye to stay alive when other seeded grasses die.

Under grazing tests it has been eaten by livestock during parts of the year when other seeded grasses were not palatable. Chemical analyses and digestibility trials have shown it to be superior to most other grasses used for reseeding. It has outstanding ability for regrowth and response to late summer rains. These, and other characteristics, should give us reason to consider Russian wild rye further. Let's take a closer look at the possibilities with this grass.

A Cool Season Bunch Grass

Russian wild rye is a cool season bunch grass introduced from the Mid-East and the U.S.S.R. It is currently under pasture trials at the Colorado A and M College Foothill Range at Fort Collins, and at the Manitou Experimental Forest** north of Woodland Park. Numerous other plantings have been made throughout Colorado during the past 12 years. It is from results of these experimental tests and other field plantings that the value of Russian wild rye has been determined.

Perhaps there has been a tendency to

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** Maintained by the Rocky Mountain Forest and Range Experiment Station with headquarters at Fort Collins.

rate Russian wild rye low as a forage producer because of tests in which clippings were made only at the end of the growing season. Its true forage-producing value was forcibly demonstrated during the summer of 1953 on the Manitou Experimental Forest. On these pastures, grazing tests are generally started in April. In 1953, because of an extremely dry June, grazing was terminated on the seeded pastures by the end of June. However, favorable precipitation during July and August permitted a second period of grazing during which regrowth records were taken.

Ability for regrowth during the warm summer months is not common among cool season grasses. Russian wild rye, with its strong regrowth habit, is an exception to this general rule.

Cool season grasses have been used by many ranchers to provide green feed before native pastures are ready to graze in the spring. For example, the cool season pastures at the Manitou Experimental Forest are ready for grazing approximately six weeks ahead of the native pine-bunchgrass ranges. But some of the cool season grasses, of which crested wheatgrass is a notable example, lose their palatability during the summer months after maturing seed. Again, Russian wild rye is an exception to the general rule. It matures seed very early, usually by July 1 at Fort Collins. Yet, the leaves remain green and are readily taken by livestock. The seed stalks are tall and do not interfere with grazing of the basal leaves. Furthermore, the dry, cured

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herbage is palatable in the winter time, much like that of blue grama.

The high palatability of the dried herbage of Russian wild rye may be related to the low fiber content. Researchers at the Montana Agricultural Experiment Station* made chemical analyses of several grasses, with the following interesting comparison between Russian wild rye and fairway crested wheatgrass showing up:

Percent Composition		
	Russian wild rye	Fairway crested wheatgrass
Lignin	10.98	15.42
Cellulose	31.02	35.68
Crude protein	18.33	6.66
Nutritive ratio	1:4.99	1:14.62

The same study showed apparent digestibility to be as follows:

Apparent Percent of Digestibility		
	Russian wild rye	Fairway crested wheatgrass
Lignin	19.5	4.3
Cellulose	68.5	54.5
Crude protein	68.5	42.0

These tables help to explain why Russian wild rye pastures produce livestock gains which are comparable to those from pastures or higher forage producing grasses. For example, at Fort Collins during the three years 1949-1951, average weight gains in pounds per acre made by cows and calves on three pastures were: Intermediate wheatgrass, 101 pounds; Russian wild rye, 160 pounds, and tall wheatgrass, 179 pounds. It is of interest to note that during the drouth of the past three years, the pasture of intermediate wheatgrass has gone out of production, the pasture of tall wheatgrass has reduced to less than half a stand, while the pasture of Russian wild rye continued in production and was the only of these three pastures grazed during 1954.

At the Manitou Experimental Forest

grazing tests are underway on various seeded dryland pastures. Yearling heifers are grazed during the growing season. The beef producing ability of Russian wild rye as compared to other grasses can be seen from the following table:

Pasture	Pounds of beef gained per acre	
	1952	1953
Crested wheatgrass	76.3	56.8
Smooth brome grass	62.1	48.0
Intermediate wheatgrass	64.8	72.9
Russian wild rye	51.6	53.8

With all its outstanding characteristics, why hasn't Russian wild rye been used more in reseeding programs? Probably the number one reason is the high cost of seed and lack of seed production. During 1954 only two growers produced Russian wild rye seed for certification in Colorado. Their combined production amounted to 145 pounds. This seed has retailed recently at around a dollar a pound. Production of Russian wild rye seed looks like a promising venture for seed growers. However, Russian wild rye is a grass which does not readily produce large quantities of seed, and if it does, the problem of shattering ripe seed is great. Wide spacing of plants, application of nitrogen, and proper soil moisture conditions will aid in seed production. Seed production under ideal dry land conditions may reach 200 pounds per acre, or up to 400 pounds per acre under irrigation. U. S. Department of Agriculture leaflet number 313, entitled "Russian Wild Rye" would be helpful to anyone interested in seed production.

There is one characteristic of Russian wild rye that is not too desirable and should be considered before this grass is used. It is a bunchgrass which will not fill in between the rows once it is established. It is such a strong competitor that weeds or other grasses cannot grow between the rows, and in areas of high wind or water erosion hazard, this may be a disadvantage. It would be necessary to make contour plantings where water erosion may occur. It may not be satisfactory for use in areas of extremely high wind erosion hazard.

It is necessary to get a good stand on the initial planting. For this reason, good seed

* McCall, R., R. T. Clark and A. R. Patton, 1943. The apparent digestibility and nutritive value of several native and introduced grasses. Mont. Agri. Exper. Sta. Tech. Bul. No. 418.

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need solutions. What about land leveling to insure better control of irrigation? Should the possibilities of water storage be investigated to insure adequate supplies and expand areas now under irrigation? Will some of the new and imported grass strains and legumes bring even greater beef yields? What role does ranch management play in determining profit or loss in beef operations in the mountain meadow country?

Any of these items could lead to more efficient livestock production. Take land leveling for example. Rancher Craig Goodwin near Gunnison is trying to make his irrigation more efficient and his hay harvest easier. After four years, a 70-acre rough, wire grass meadow that yielded one ton of hay per acre prior to leveling is now averaging three tons per acre. The increase in hay yield has already returned the cost of his leveling operation.

Rancher Park McDonnough in the Aguache Park area of Colorado is combining water storage with nitrogen fertilization to control irrigation and production of his old meadows and to bring new areas under meadow production.

Rancher Ferrington Carpenter, Hayden, has combined nitrogen fertilization and early harvest with the prospect that he may soon produce as much livestock on half his ranch as his entire ranch produced before.

Other leads are coming from research now underway. One shows that the one-

Controlled irrigation with a sprinkler system is the subject of investigation at this pilot plant located on the Ferrington Carpenter ranch near Hayden, Colorado.

ton yields now obtained from meadows containing rushes and sedges might be jumped to six tons if adapted grasses are used with controlled irrigation. Liberal use of nitrogen with good water control has produced experimentally from four to six inches of grass growth by May 15 at Gunnison. This compares with little or no growth on pastures left untreated. The same treatment brought three to seven inches of regrowth after September compared with one to two inches of regrowth on untreated pastures. This finding could lead the way to a longer pasture season for mountain meadows.

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proper seedbed preparation, and careful seeding are needed. The young seedlings are not as robust and vigorous as those of tall and intermediate wheatgrass. It isn't until the third year after planting that stands of Russian wild rye become readily apparent.

If you are planning a range reseeding program, you might consider Russian wild rye where you desire the following characteristics:

- Drouth resistance

- Early spring pasture

- Pasture that will procure regrowth with summer rains

- A palatable and nutritious winter pasture

- Tolerance to moderately alkaline dry soils

- A promising grass for the seed producer.

