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Grass
the rancher's crop

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Grass

The world's biggest crop is grass. Not only does it cover more than a fifth of the land surface of the globe, but it is the most widely distributed of all plants. It grows in hot deserts, inside the Arctic Circle, and in all climates and zones between. Grass is a land builder. It converts great stretches of marsh and tidal flats into productive meadowland in the coastal areas; it helps to create the rich black soils of the prairies. Grass affords protection from floods, guards the water supply of our cities, furnishes our great cereal crops, and supplies the forage for livestock. Of all the families of plants, grass is the one most essential to man's existence. "All flesh is grass," Isaiah says in the Bible. Thus the philosophers of ancient times, too, recognized the importance of grass.

SOIL CONSERVATION SERVICE
U. S. Department of Agriculture

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the Rancher's Crop

by J. S. McCorkle, *range conservationist, Soil Conservation Service*

Animals either depend primarily on grass for food or feed on other grass-eating animals. Even microscopic organisms living in the soil feed on grass roots. Because these organisms, together with the grass roots, decay and thus improve the soil, most grasses are more effective than any other type of plant in conditioning the soil for continued high production. Common cereal plants, like corn and wheat, are members of the grass family that have been selected and bred for certain factors such as seed production or forage. Some grasses are used for making fiber products. When all these uses and the wide distribution of grass are considered, the truth of John J. Ingalls' grass tribute is evident: "Should its harvest fail for a single season, famine would depopulate the earth."

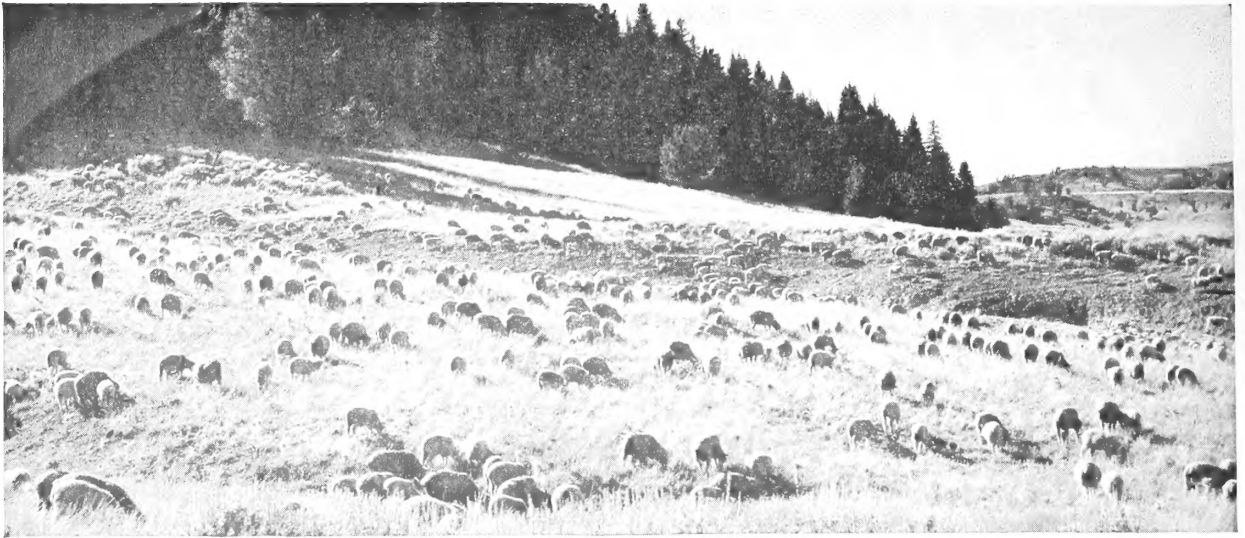
In the United States nearly a billion acres, or a little over half of the total acreage of the country, produce grass that is used for grazing livestock. In the West, the percentage is even higher.

Grass Is Seeded by Nature and by Man

In much of the world grass is grown as a cultivated crop, seeded by the labor of man. In the range States of the West, grass was growing luxuriantly when the pioneer first brought in his herds of livestock. Nature had provided grass as the plant best adapted to grow on most of the vast range area. A great many acres of the rangelands are not adapted to plowing and sowing of grass or any other crops, so the native grasses seeded by Nature



Should the harvest fail for a single season, famine would depopulate the earth.



Nature has provided grasses as the plants best adapted to the vast range area.

continue to be the principal crop grown on Western rangeland.

It is perhaps not strange that grass should sometimes be thought of as able to take care of itself under all conditions. It renews itself year after year; it is a crop that endures the fluctuations of weather from droughts to floods; and it survives misuse by animals as well as insects, rodents, and other pests. Grass is a hardy plant and is able to endure an extremely wide variation of conditions and hardships.

Grass Has Definite Needs for Growth and Production

Although it is hardy, grass is a living thing and, like animals, must have food, air, water, and light to live and develop. It must have certain things for growth and a plant body large enough to make leaves, stems, roots, and seeds. It takes a thrifty plant and an abundant supply of plant materials to make a good forage crop.

The grass plant has roots in the soil that take in water and minerals and green tops that take in air and light. From the water, minerals, and carbon dioxide in the air the green leaves manufacture the plant food and plant tissues from which it makes new plant growth in stems, leaves, roots, and seeds. Without sunlight, the plant would not be able to manufacture food in the leaves. Without leaves, the roots are helpless because they would not be able to manufacture plant food. They can send up green leaves so long as they have stored plant-

food material but they cannot make the plant food for new growth.

Finally, the grass plant must have the opportunity to grow and develop when the soil, moisture, heat, and light are present in the right combinations for growth.

Grass Is the Background for Good Livestock

The rancher thinks of himself principally as a producer of livestock. The average rancher has well-bred herds and some fine animals in which he takes a great deal of pride. He is also interested in and concerned with his rangeland and the plants that grow on it. The rancher does not need to be



In much of the world, grass is seeded as a cultivated crop.

told that his livestock is dependent on these plants for a livelihood. He recognizes the truth of the statement, "Take care of the range and it will take care of the stock." To produce good livestock, he knows he must have good feed for them, which he can supply most easily and cheaply from good range.

Throughout the world's history, good grass-producing areas have been those that produced good livestock. England has some of the world's finest grassland—the main reason why that country has an enviable reputation for fine livestock. Sections of Argentina, Australia, and the United States are famous for livestock production because they have wonderfully productive grasslands.

Present operating conditions make ranching a highly competitive industry. Each acre of land and each forage plant must produce a good yield if the rancher is to prosper. It is important that the rancher know and recognize the needs and requirements of the plants in order that each one may do its bit to add to the stock of meat in the butcher's shop.

Grass Crop Is Produced by Cooperating With Nature

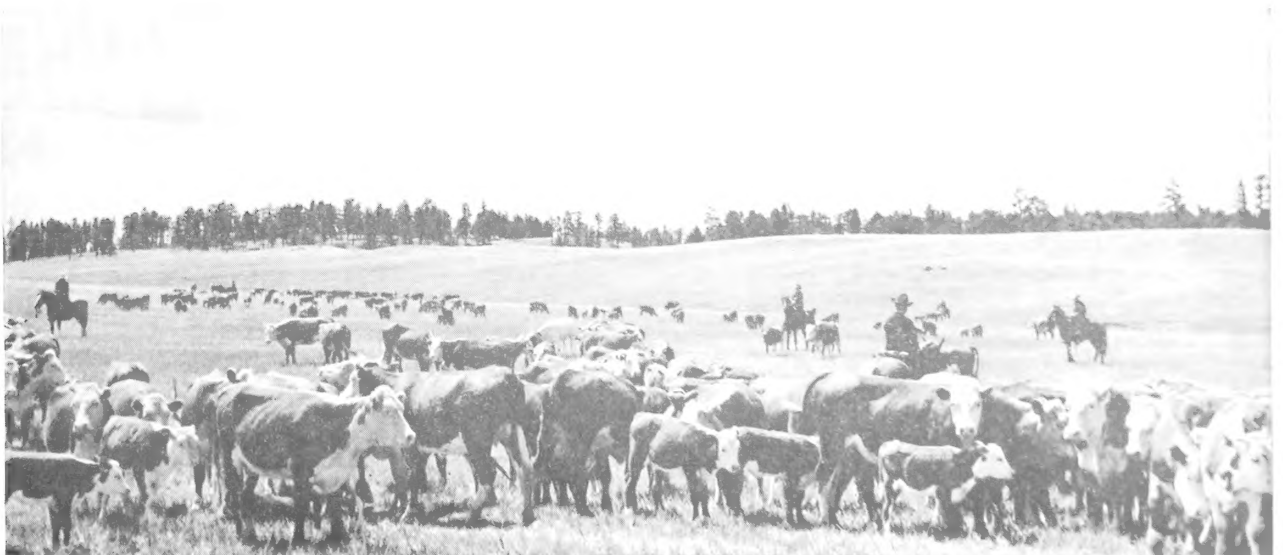
The farmer studies the needs of his crop carefully. He must till the soil, seed the crop, and adapt his harvesting methods to make the most efficient use of his equipment. He measures his crop in bushels or tons of crop harvested. The rancher measures his crop in pounds of beef, lamb, and wool, because this is the measure of his market product. While he has not thought much about the grass production



Grass is living, and like animals, must have food, air, water, and light.



Grass endures all the fluctuations of weather.



The rancher takes pride in his well-bred herds, and equal pride in the grass that produced them.



In the United States over half the land, nearly a billion acres, produces grass for livestock.

in tons, he is still directly concerned with the quantity of grass because he well knows this directly determines the pounds of meat he can produce. It is even more important that the rancher study his crop carefully because he does not have the opportunity to plant the succeeding crop. He must work with Nature for the seeding of most productive plants and those that are best adapted to the area.

Nature is a cheerful helper but a relentless foe. Before man came along, her way of keeping balance was hard and ruthless; drought, winter cold, disease, and predators regulated the grazing population. With these controls she was usually able to maintain the most productive plants and build up the soil. By studying the requirements of Nature and using

the range according to those requirements, the rancher can get a good harvest of forage and produce a good turnout of meat and wool. At the same time, he will keep the basic resource—the soil—in good order. Good judgment in adjusting range use to meet the raw forces of Nature will enable him to improve the yields of livestock products without destroying the soil from which the products come.

Grass Production Can Be Aided by Man's Knowledge

By careful consideration of their demands, a rancher can maintain range plants and at the same time harvest a good crop of livestock products. To



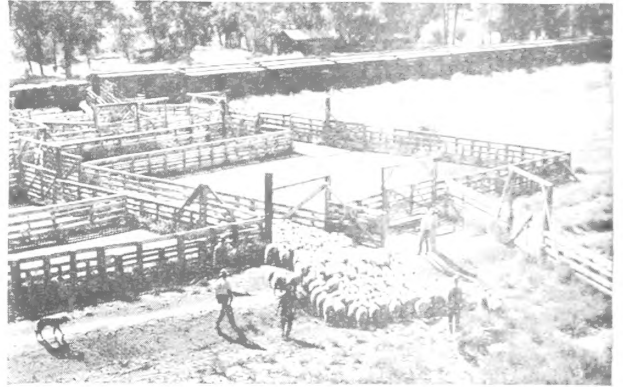
Each acre must produce a good yield if the rancher is to prosper.

do this, there are certain things about the management of these plants and the land on which they grow that he must know and use. He must know and understand what plants need to develop and maintain themselves. He must know the kinds of plants that fit together to make a good range, the kinds that will hold the soil and water and produce a high yield of forage. He must know when each kind of plant grows, when it seeds, and how and when new plants develop. He must know at what season each plant is most valuable for forage and at what season each is eaten by animals, and how much grazing it will tolerate. Each plant species has different requirements. Each plant must compete with other plants. The differences in the time of growth, type of root system, and amount and type of growth are among the things that help plant species compete with each other.

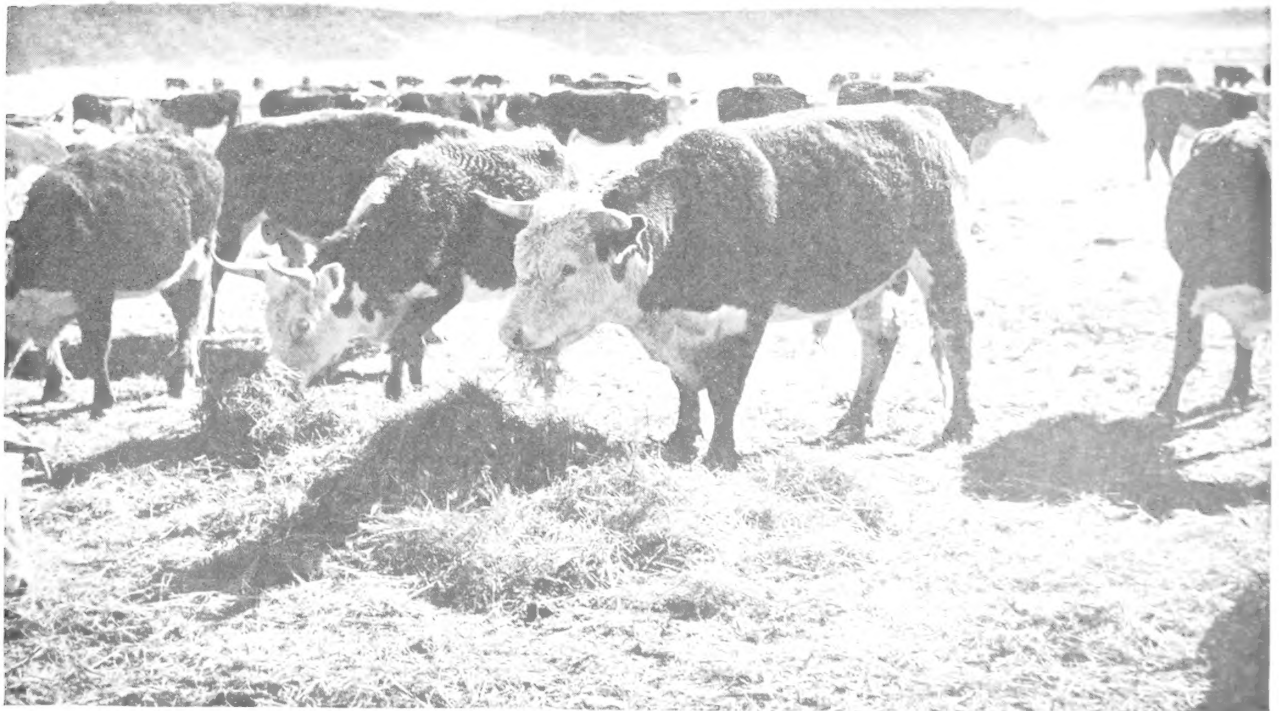
The rancher can apply this knowledge of forage-plant development and adjust grazing so that the plants will produce a maximum forage crop. He must harvest his crop of forage grass at such a time and use it at such a rate that the plants will stay vigorous and productive and will reseed themselves. The rancher who studies these things and applies his knowledge is the rancher who will stay in business and continue to prosper.



The rancher measures his grass crop in pounds of beef.



Grass goes to market on the hoof.



The average ranch in the United States contains about 10,000 acres capable of producing 200 to 300 pounds of forage per acre—enough to produce 75,000 to 100,000 pounds of meat animals.

The Grass Rancher Is Important to the Nation

The modern rancher is no piker when it comes to producing food for the Nation. Conditions vary a great deal but it would not be far wrong to say that the average ranch contains 10,000 acres capable of producing 200 to 300 pounds of forage per acre. This means 2 to 3 million pounds of grass, which is a lot of hay. If he uses reasonably good judgment in the use of this feed, he may market 75,000 to 100,000 pounds of meat animals. This should give the rancher a justifiable feeling of pride as one of the producers of foodstuff for the Nation.

At the same time, however, the country has entrusted to the rancher's care a sizable acreage of land. With this privilege to use goes the responsi-

bility to take care of this land and keep it in a productive state. In doing this, the rancher must produce enough to make his own livelihood. It has been said that poor people and poor methods make poor land. The ranch that does not provide a satisfactory livelihood for the operator will not be given good care by him. Of course, the statement is also true in reverse: the ranch that is not given good care cannot provide a good livelihood for the operator. A well-balanced ranch operation requires careful livestock husbandry; it requires equally careful management of the grass.

Ranchers who want help on their ranch-management problems can get it from their county agents or from the Soil Conservation Service technicians assigned to work with their soil conservation districts.



The rancher must know his grasses, when they grow, the season each kind is most useful, and how much grazing they will tolerate.

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