

UCSU 20/6.22/700
c. 2

RECEIVED

Horse pastures

SERVICE

MAY 24 1990

IN ACTION
COLORADO STATE LIBRARY
State Publications Library

Elmer E. Rothman and
Harvey A. Sprock 1/
no. 700

COLORADO STATE PUBLICATIONS LIBRARY
UCSU20/6.22/700 c.2
Rothman, Elmer E./Horse pastures local

COLORADO STATE UNIVERSITY COOPERATIVE EXTENSION



Quick Facts

- The feed requirement of a 1,000-pound (453.6 kilogram) horse includes five tons (4,535.9 kg) of air dry forage per year.
- Dryland range requirements are 30 to 60 acres (12-24 hectares) per horse per year.
- Productive irrigated pastures have capabilities of two animals per acre (.8 animals per hectare) per month during the growing season.
- Good varietal selections, proper seedbed preparation, shallow planting and packing result in optimum pasture-grass emergence.
- A productive, established irrigated pasture will require 150 to 180 pounds per acre of nitrogen (168-202 kg/ha) annually.
- Proper grazing management is important in producing abundant, good-quality forage.

A good pasture can be an important part of a balanced horse program. A pasture may provide a contrast of uses to different persons. Its first importance to show- or race-horse owners may be for exercise or display purposes. To many others, a pasture provides much of the feed that horses need.

Feed Requirements

In many instances, both irrigated and dryland pastures are overgrazed because of insufficient pasture for the number of animals being grazed. How much pasture does a horse require? A horse will eat, trample or damage at least 1,000 pounds (453.6 kilograms) of air dry forage per month.

Forage production in Colorado varies from one-half ton per acre (1121 kilograms per hectare) on nonirrigated land to five tons per acre (11,208 kg/ha) on land with optimum irrigation production practices.

Forage production in most areas of Colorado occurs during a five- to six-month period. Based on a five-ton per acre (11,208 kg/ha) yield, one acre (.4 ha) of good improved pasture would provide five months of grazing for two 1,000-pound (453.6-kg) horses. It is important to consider the body weight of the animals, since more grazing can be expected if smaller horses are grazed.

By comparison, dryland pastures and rangelands in Colorado only produce 500 to 1,000 pounds per acre (560-1121 kg/ha) of air dry forage per year. Only about one-half of palatable plants can be utilized in order to maintain the stand. Since the pastures normally are

larger and the palatable plants are spaced farther apart, a horse expends more energy. Therefore, 2½ to five acres (1-2 ha) are required per horse per month or 30 to 60 acres (12-24 ha) per horse per year.

Pasture Management

There are several methods of grazing pastures. *Continuous grazing* is most common, however this practice is extremely hard on vegetation. *Rotation grazing* provides the opportunity to produce large quantities of high-quality forage. The pasture is divided into three, or more fields and the animals are allowed to graze a given field for a short period followed by a four-week rest period. On small acreages, a two-pasture rotation is better than continuous use.

The grazing system to use will depend on the species and production level required for individual grazing needs.

Many established pastures are not producing optimum forage yields. Several management practices can be used to improve forage production.

Grasses respond to nitrogen fertilizer. Forage production generally can be doubled when established pastures are fertilized with nitrogen at 50 to 60 pounds per acre (56-67 kg/ha) at the beginning of the growing season and repeated twice at six-week intervals throughout the summer.

Pastures should be irrigated at intervals which do not permit plants to be stressed. The approximate water use amounts to a total annual consumption of 24 to 36 inches (60.9-91.4 centimeters).

Livestock should not be allowed to graze pastures during and immediately following irrigation. When pastures are divided for rotational grazing, the area not being grazed can be irrigated. Adequate time should be allowed for drying of pastures after irrigation before animals are permitted to graze, to minimize trampling, plant injury and soil compaction.

Proper grazing management is important in producing abundant, good-quality forage. Grass should be grazed to maintain the leaf area and root reserves which will allow immediate regrowth and maximum production. Minimum grazing heights will average four inches (10.2 cm) of stubble before rotating.

Pasture Establishment

Establishing a good irrigated pasture requires much time and effort. There are no shortcuts in the

Elmer E. Rothman, Colorado State University Cooperative Extension agent, agronomy, and Harvey A. Sprock, range conservationist, Soil Conservation Service (revised 1/88)

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture, Kenneth R. Bolen, Director of Cooperative Extension, Colorado State University. Cooperative Extension programs are available to all without discrimination.

To simplify technical terminology, trade names of products and equipment occasionally will be used. No endorsement of products named is intended nor is criticism implied of products not mentioned.

procedure. Pastures produce the most forage on deep, well-drained soils. A soil sample should be taken from the field before it is seeded. The local county extension office has soil-sample bags and forms.

It is important to know the alkalinity, salinity, texture and phosphorus level of the soil. If the soil is deficient in phosphorus, an adequate supply of phosphorus (based on the soil test) should be applied and plowed under prior to establishing the pasture.

Nitrogen is required for pastures and should be applied periodically on established stands. The soil test also is valuable in determining which species will adapt.

Irrigated Seedings

Several species of grasses and legumes can be adapted for horse pastures. Colorado irrigation recommendations suggest only cool-season grasses and legumes.

Orchard grass, bromegrass, intermediate or pubescent wheatgrasses are species, in the order of normal productive capabilities, that can be chosen for the pasture.

Adapted legumes, such as alfalfa and ladino or white Dutch clover, also can be seeded with the grass.

Seeding rates on all pasture grasses should be based in pounds (kilograms) of pure-live-seed (PLS). PLS percentage can be determined by multiplying "purity" by the "germination"/100.

Standard PLS values of four basic species have been computed and listed in Table 1. Generally, only one or two species should be planted, since grazing normally will eliminate all but one.

Table 1: Basic irrigated pasture species.

Orchard grass

4 lbs/A (4.5 kg/ha) of pure-live-seed or
5 lbs/A (5.6 kg/ha) of bulk seed

Bromegrass

13 lbs/A (14.6 kg/ha) of PLS or
16 lbs/A (17.95 kg/ha) of bulk seed

Intermediate or Pubescent Wheatgrass

10 lbs/A (11.3 kg/ha) of PLS or
12 lbs/A (13.6 kg/ha) of bulk seed

Alfalfa or clover

8 lbs/A (8.9 kg/ha) of PLS or
9 lbs/A (10.1 kg/ha) of bulk seed

If a blend of grass and alfalfa is preferred, it should never exceed 25-percent legume in the mix. Using orchard grass for example, would call for 75 percent of 3 pounds or 2.25 pounds PLS per acre (2.5 kg/ha) and 25 percent of the recommended 8 pounds for alfalfa or 2 lbs PLS per acre (2.25 kg/ha).

Orchard grass is widely adapted and produces excellent quality forage but will not tolerate drought, wet or alkali soil conditions.

If full-season irrigation water is not available, smooth bromegrasses, intermediate or pubescent wheatgrasses may be seeded.

Pasture can be established from April through Sept. 15; however, the ideal time to establish pasture is from April through June 15. Late fall seedings generally do not become well enough established to survive any cold, dry winters that are common in Colorado.

New seedings made with a good grass drill have been consistently superior to those broadcast and covered by other means. Broadcasting requires about

50-percent more seed than drilling. Seeding depths should not be more than ¾ to 1 inch (1.9 to 2.5 cm) for sandy soils and ¼ to ½ inch (.6 to 1.2 cm) for small seeds on ideal soil textures.

During seeding, 25 pounds per acre (27.9 kg/ha) of nitrogen and 0 to 50 pounds per acre (0-56.1 kg/ha) of phosphorus (P₂O₅ based on soil test) should be applied just below the seed.

A new stand should be irrigated frequently so that the soil is not dry near the seed. After emergence, the seedlings should not be allowed to become stressed.

A new stand of irrigated pasture should not be grazed during the first full season after planting and not until it is six inches (15.2 cm) tall in the second season. Grazing earlier generally will reduce or severely damage the stand from trampling or removal of the entire plant. Frequent mowing of weeds is required to obtain the best stand.

Dryland Seedings

Seeding on dryland is more critical. A clean, firm sorghum stubble, prepared the year prior to seeding, makes a good seedbed. Nurse crops or small grain stubble are discouraged.

February through April is the best seeding time. Grazing should not be allowed for one to three years following seeding. Frequent mowing of weeds is important.

After establishment, the pasture should be deferred from grazing for one complete growing season out of two or three years.

There are two important cool season grasses for dryland as shown in Table 2.

Table 2: Basic species of dryland grasses.

Pubescent wheatgrass

9 lbs/A (10.9 kg/ha) of PLS or
11 lbs/A (12.3 kg/ha) of bulk seed

Western wheatgrass

8 lbs/A (8.9 kg/ha) of PLS or
13 lbs/A (14.6 kg/ha) of bulk seed

On small dryland acreages, it is suggested that a shelter and exercise corral be located in a convenient area. The remainder of the area can be seeded to a recommended dryland grass. Very limited grazing can be permitted, and this area can be used for riding and training. This procedure will help reduce the problems of barren areas resulting from overgrazing and will help reduce blowing dust, as well as increase the beauty and value of the property.

