

Forages for Beef Cattle

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Pasture forages for beef cattle can be roughly divided into five categories—warm-season perennials, warm-season annuals, cool-season perennials, cool-season annuals and legumes for pastures. Each of these forage types can meet the nutritional requirements of beef cattle when they are at their peak production (Figure 1). However, none are able to satisfy the nutritional needs of a cow with calf or a growing animal, which are at their low point in production.

Warm-Season Perennials

Warm-season perennial pastures tend to be the best grasses for a cow-calf operation because they do not

have to be planted each year. Once established, these pastures continue to produce for many years. The annual grasses are the most expensive grasses for forage because they must be planted each year, the seed is costly, there is a limited production season and they require high rates of fertilizer.

Warm-season perennial pastures, such as bermuda-grass, bahiagrass or kleingrass, generally have a longer growing season than cool-season plants. Since they are perennial plants, they regrow from roots each year. Because they do not have to re-establish yearly, they maintain top forage production for longer periods. They also tend to be lower in digestibility and in protein because of the fiber buildup during the warmer part of the growing season.

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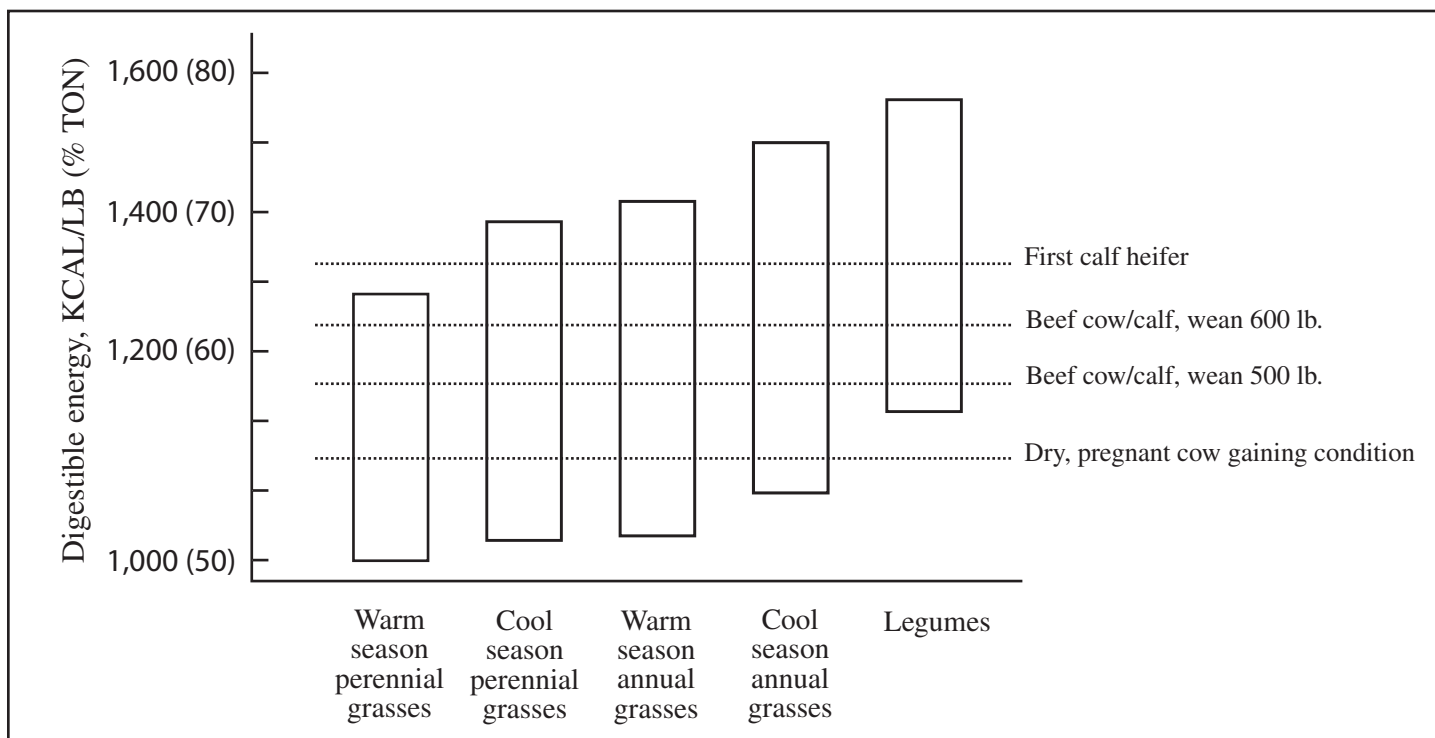


Figure 1. Variation in energy content of various forages relative to the requirements of various classes of cattle.

Warm-season perennial grasses respond well to fertilization and, with heavy fertilization, can produce large amounts of hay or grazing per acre. If fertilized and managed properly, they work well in almost any live-stock production program.

Warm-Season Annuals

Warm-seasoned annual grasses, such as the sudans or forage sorghums, play definite roles in livestock production. Being annual plants, they are expensive because land must be prepared and seeded annually. They offer higher quality (digestibility) grazing than perennial warm-season plants, but their production period is shorter. They use less fertilizer, will serve as temporary pasture and maintain a relatively high carrying capacity of two or three animals per acre for 30- to 45-day periods. Their prime role in forage production, however, is for high quality hay.

Cool-Season Perennials

Cool-season perennial plants have limited use in Texas. Tall fescue and tall wheatgrass are the only cool-season perennial plants that adapt to Texas climate. They generally do not offer high quality nutrition for maximum animal performance.

Cool-Season Annuals

Although cool-season annual plants, such as oats, wheat, rye, barley, triticale and ryegrass, are expensive pastures because of the cost to establish each year, they are high in nutritional value. Winter annuals are best adapted to stocker operations or to cow-calf combination programs. Because of their expense, annual pastures may not be the best types of pastures for dry pregnant cows, which can be maintained very well on less expensive forages such as high quality hay.

Legumes

Legume forages might also be considered for a live-stock operation. Temperate legumes include clovers, medics, peas, vetch and alfalfa. They can be over-seeded into permanent pastures or seeded with winter annual pastures. Legumes have the unique ability to fix their own nitrogen if they are properly inoculated (nitrogen-fixing bacteria is added to the legume seed before planting). They require high levels of phosphorus, potassium and, in acid soil, lime. Cool-season or

temperate legumes produce most of their growth during the late winter-spring period, when they are very useful in beef cattle operations. Warm-season or tropical legumes, such as cowpea, soybean, and peanut, can provide high quality forage during the summer. However, they are used as a salvage crop in drought years when they do not "yield" well as a row-crop.

A Year-round Forage System

No grass meets the production and quality requirements of livestock year-round. Consequently, livestock producers can benefit by combining two or more forage plants into a forage system. By growing adapted summer and winter forage species, livestock producers can furnish grazing for most of the year. Although this requires management and planning, it reduces hay and feed costs.

Sodseeding or overseeding legumes or small grains in conjunction with a warm-season perennial pasture offers several advantages over clean-tilled or prepared seedbed cool-season pastures:

- Sodseeding allows a longer productive period for any given acre of ground. The cool-season grass may not be as productive as on a clean-tilled seedbed, but using with a warm-season perennial plant, the sodseeded pastures will extend the spring green-grazing period by as much as 60 days.
- If winter pastures are adequately fertilized, the base grass or warm-season grass also benefits.
- Sodseeded pastures offer a higher level of nutrition and enhance animal performance.

Any warm-season perennial grass (bermudagrass, bahiagrass, kleingrass or even native grasses) can be overseeded. The problem is competition in late spring between an overseeded pasture and a warm season perennial pasture that is beginning to grow. There is direct, heavy competition in this overlap growth period for nutrients, moisture and sunlight. During dry springs, an overseeded winter pasture takes the elements for growth and might completely retard the growth of a warm-season grass. Heavy competition with the warm-season grasses may result in a thinning of native or bunch grass stands when they are continually overseeded.