

The changing diet needs of broodmares

Proper nutrient supplementation is essential for late pregnant mares

BY JOE PAGAN, PH.D.

BROODMARE MANAGERS have historically divided a pregnant mare's gestation into two distinct periods, from conception to about eight months of pregnancy, and from nine months of pregnancy to birth. The belief was that pregnant mares had similar nutritional requirements as mature, idle horses during the first eight months of gestation. An increase in protein and energy was recommended during the last months of pregnancy because fetal growth accelerated.

Recent research has indicated, however, that the provision of certain nutrients should be increased long before the nine-month mark.

As has been done previously, mares should be nourished the same as any horse at maintenance for the first four months of gestation (assuming she is not simultaneously nursing a foal), but nutritionists now recommend an upsurge in nutrients at the five-month milestone.

The research cited takes into account not only the maintenance of the mare's body weight and fetal growth but also the nutritional expenditures involved in the creation and maintenance of less-obvious gestational tissues such as the placenta and mammary glands.

How additional nutrients are delivered depends largely on the forage that is available to the mares during particular points of gestation. Because foaling season generally spans at least five months and sometimes longer (January through early June), pregnant mares require different fortification at different times of the year.

Supplementing fall pasture

A mare residing in Kentucky with a projected foaling date of January, for instance, will often have had at her disposal high-quality forage for the majority of her gestation. High-quality fall pasture can provide much of the energy and protein requirements of mares, especially when the volume of forage consumed by mares can be considerable. Most mares consume at least 1.5% of their body weight daily, but others may eat more than 2%.

Typically, a 1,275-pound broodmare in late pregnancy will consume approximately 20 pounds of forage dry matter each day, assuming she has full access to pasture much of the day. This level of intake often keeps mares in at least acceptable body condition and sometimes in fleshy condition.

Average Kentucky fall pasture will provide this mare with sufficient digestible energy and protein (shown in Figure 1, green bars). However, regardless of how much pasture the mare consumes, mares



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Additional supplementation must be added to make up for these mineral inadequacies. In this situation, a balancer pellet or cube

is an ideal solution. Such a cube adds little in the way of digestible energy, but increases protein and mineral intake.

These cubes are usually manufactured in sizes larger than the pel-

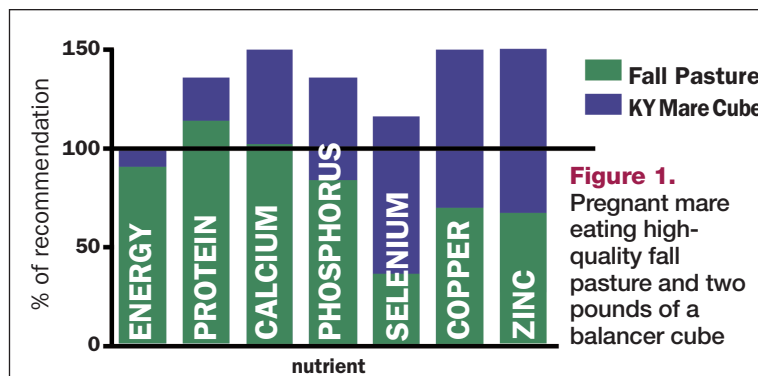


Figure 1. Pregnant mare eating high-quality fall pasture and two pounds of a balancer cube

lets in a typical concentrate, about a half-inch in diameter. This allows them to be consumed easily when they are fed in the pasture. Feeding rate is usually low, depending on the size of the mare. In the example shown, two pounds are fed.


With the addition of the fortification cube (Figure 1, blue bars), requirements for all key nutrients are met.

Supplementing hay

Using the same 1,275-pound mare as an example, let us assume a later foaling date so that hay will represent a larger portion of her diet in late gestation. A mixed, mostly grass hay is typically fed to broodmares, usually at a rate of about 20 pounds a day. Regardless of quality, such

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hay possesses fewer nutrients than fall pasture, as shown in Figure 2 (green bars).

As a result, more fortification is required, and this must come in the form of a concentrated feed (a typical textured or pelleted feed). Because many mares are not receiving adequate digestible energy from only the forage, increasing energy intake is the primary goal. Without this boost, mares will lose body condition, putting at risk the health of their unborn foals. Fed at the recommended rate, a well-formulated feed, designed especially for gestating mares, will satisfy en-

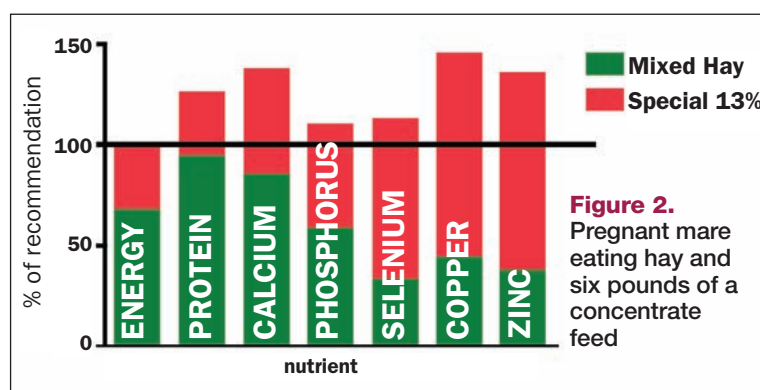


Figure 2. Pregnant mare eating hay and six pounds of a concentrate feed

ergy and protein requirements. When this feed is fed in a quantity that meets energy demands (six pounds in this example), mineral

requirements will also be met (Figure 2, red bars).

Choosing feeds based on the mare's needs

Some mares are able to maintain body condition in late gestation on an all-forage diet, regardless of whether the forage available is pasture or hay. This seems to be particularly true in areas where pasture is abundant, or where stocking rate is low. Alternatively, a mare might have a lower metabolic rate than her peers.

In these instances, mares might not require a typical energy-dense concentrate at any point during gestation. However, it is imperative that a balancer be fed to these mares, as a balancer will provide them with high-quality protein, vitamins, and minerals. Deficiencies in certain trace minerals can affect fetal growth and development.

Researchers have clearly demonstrated the importance of trace mineral supplementation in pregnant mares. The requirement for copper was substantiated in one study. A group of pregnant mares was divided into two groups, those supplemented with copper and those that were not, and then subdivided into four groups based on whether the foals were supplemented with copper or not. At 150 days of age, foals from mares that received insufficient copper had a higher incidence of physitis than those that were supplemented. In addition, there was a significantly lower incidence of articular cartilage lesions in foals from mares supplemented with copper.

The table below shows typical intake ranges for two distinctly different feeds, a balancer and a typical concentrate, as well as appropriate nutrient ranges for each type of feed intended for gestating mares. Because the balancer is fed at lower intakes, nutrient concentration is greater.

	Balancer	Typical concentrate
Daily intake	1-2 lbs	6-12 lbs
Protein	25-30%	13-15%
Calcium (Ca)	3.00-3.75%	0.75-0.90%
Phosphorus (P)	1.7-2.0%	0.60-0.75%
Selenium (Se)	2.0-3.0 ppm	0.65-0.8 ppm
Copper (Cu)	175-200 ppm	35-50 ppm
Zinc (Zn)	450-600 ppm	110-180 ppm

The type of forage consumed by mares during late gestation may have a bearing on the type of concentrate offered. Trace mineral supplementation, provided by a balancer or a traditional textured or pelleted concentrate, is vital for optimal nutrition. Consultation with a qualified equine nutritionist will ensure that your mares are receiving diets appropriate for their stage of production. 🐾

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