

# Proper Nutrition for the Broodmare

BY HEATHER SMITH THOMAS  
ANNE M. EBERHARDT PHOTOS

**M**ares must have a well-balanced diet and healthy body condition to cycle properly and conceive and carry a foal. According to equine nutritionist Dr. Tania Cubitt, nutritional management is a simple, cost-effective tool to ensure normal estrous cycles and optimum pregnancy rates. If adequate nutrients are not accessible to the mare as stored body fat or available in the feed, she will not cycle.

## Importance of Body Condition

A common mistake some owners make when they decide to breed a mare is not planning ahead—they make the decision to breed at the last minute. At this point, pregnancy might not be feasible if the mare is too thin or too fat.

“Owners need to be proactive and get the mare in proper body condition first,” Cubitt said. “If her body condition score (BCS) is somewhere between 5 (moderate) and 7 (fleshy) on the Henneke scale, there’s a much better chance of getting her pregnant.”

Dr. Amy Gill, a private equine nutrition consultant in Lexington, says thin mares are less likely to cycle, become pregnant, or stay pregnant than mares with adequate

stored energy in the form of adipose (fat) tissue. Broodmares with body scores of 4 and below are too thin for a healthy pregnancy, and mares with scores of 8 to 9 are too fat. Mares with desirable BCS between 5 and 7 start cycling earlier in the breeding season than mares with low body condition scores. “Adequate body condition helps create a positive energy balance, which tells the mare’s body there’s enough energy to cycle and become pregnant,” Gill said.

Thin mares have decreased ovarian activity and longer intervals between ovulations. They are less likely to cycle and more likely to suffer early pregnancy loss if they are bred. Brian Nielsen, an assistant professor of equine nutrition at Michigan State University, says the biggest issue for getting mares in foal is just making sure they have adequate body condition. “There have been some misconceptions in thinking that fat mares are not fertile or that the ideal situation is to have mares thin and in a gaining condition. Research shows, however, that you’re better off having them a little on the plump side,” he says.

Even though a BCS of 5 is considered ideal, a mare needs fat reserves at the time she foals and benefits from a body score of 6 or 7. “Even if she’s BCS 5 at foaling, her energy demands increase dramatically at that time for lactation,” Nielsen said.

The mare will lose weight, and, unless

she has some reserves, lactation could lower her condition to a point where she’s less apt to cycle properly for rebreeding.

“The mare should be fed more during late pregnancy so that she is not BCS 5 or lower at foaling and so she’ll have more leeway after she starts lactating,” he continued. “As someone once said, ‘You should feed a mare like a dairy cow; otherwise she’ll look like one.’”

Feed a mare for lactation as well as for rebreeding, if that’s your intention.

Overweight mares, especially if they’re obese, might also have difficulty getting pregnant. Obesity in horses has been associated with decreased insulin sensitivity, and research has shown that both obesity and decreased insulin sensitivity might decrease reproductive function.

Cubitt points out obese mares also have longer intervals between ovulations, and this could be due to a persistent corpus luteum (the progesterone-producing structure formed after the follicle releases the egg; this hormone keeps the mare from going back into heat) in the ovary. This could make rebreeding the obese mare more difficult if the first breeding is not successful.

If a fat mare needs to lose weight, get her down to proper body condition well ahead of when you plan to breed her.

“Mares on an increasing plane of nu-



Adequate nutrition is the key to good body conditioning, on which a broodmare’s success hinges



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## Critical Factors for a Successful Broodmare Nutrition Program

There are many important areas that must be continually addressed in order to manage a successful broodmare operation. Following are the most critical factors to ensure a successful nutrition program for broodmares.

- **Good Forage Quality** – proper soil fertility will result in the highest yield and nutritional quality of pasture grasses for broodmares. Analysis of hay is essential to determine its acceptability for the broodmare diet. Providing quality hay that contains a minimum 8% crude protein, maximum 40% ADF (acid detergent fiber) and maximum 60% NDF (neutral detergent fiber), on an as fed basis, will insure that broodmares can consume adequate amounts of digestible energy and maintain adequate body condition during breeding, pregnancy and lactation.

- **Proper Body Condition Score** – A body condition score (BCS) of 5 to 6 provides the broodmare with adequate fat stores necessary for an optimal conception rate. Mares that are too thin and enter the breeding season with a BCS of less than 5 will have reduced reproductive efficiency.

- **Adequate Nutrient Intake** – Many times there is adequate pasture or

hay to maintain broodmares in proper body condition with supplementation of small amounts of grain or concentrate. Forage, however, is deficient in major and trace minerals that are important for proper development of the growing fetus in the pregnant mare. The use of a supplement or balancer pellet, especially during the first eight months of the broodmare's gestation period, is a concentrated source of protein, vitamins and minerals and meets these nutrient requirements with a low feeding rate. This type of product includes Triple Crown 30% Supplement (recommended feeding rate of 1½ lbs/head/day) and Legends 24 Mare Nugget (recommended feeding rate of 3 lbs/head/day).

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*Dr. Martin W. Adams, Equine Nutritionist for Southern States*

trition (gaining weight) tend to cycle and breed more successfully than a mare on a decreasing plane of nutrition. Even though she may be fat, loss of weight signals the brain that she should not cycle," explained Cubitt.

Nature has programmed the body to ensure its own survival; a mare losing weight might not have adequate nutrition for both herself and a developing fetus.

If a mare is quite thin (BCS 2 or 3), it might take six months to get her up to proper body condition for breeding. But take care when feeding for weight gain, not to overfeed energy-dense feeds that might create digestive problems or lead to laminitis. Wait a year to breed if your mare's body condition is not where it should be, suggests Cubitt. This would allow the mare time to gain and maintain proper weight and resume a normal estrous cycle before you try to get her in foal.

"Keep her on an optimum plane of nutrition, because once she does get pregnant, the first few weeks of pregnancy are also crucial," Cubitt said. "Early embryonic loss is a big issue in mares, plus the fetus is developing critical organs such as the brain and eyes in those first few weeks. By Day 24 you can see the heartbeat. You don't want drastic changes in the mare's body condition during that time. This is a very vulnerable period."

### Importance of Balanced Diet

A broodmare needs a balanced diet in terms of vitamins, minerals, adequate amounts of protein, and so forth. Vitamin and mineral deficiencies, for instance, can have adverse effects on the embryo before and after it implants in the uterine lining.

A maiden or barren mare out on pasture or hay and not in work can be on a maintenance diet. "The hay or grass may be ad-

equated for calories to keep her in proper body condition, but she may still need a supplement to provide certain minerals if soil or hay is deficient. Something as simple as a ration-balancer pellet may be all she needs," explained Cubitt.

This could supply whatever might be missing in her diet, without adding excess calories.

"Adequate selenium, for instance, is very important for fertility," Cubitt said.

Research in cattle and horses has shown selenium deficiency can increase the incidence of early embryonic death, she notes. Other common clinical signs associated with selenium deficiency include an increased incidence of retained placentas, cystic ovaries, and weak or

silent heat periods.

"Much of the (soil in the) U.S. is deficient in this element," she said. "Most commercial feed companies fortify their feeds with selenium." Organic selenium is typically listed on feed tags as selenium yeast.

Nielsen stresses importance of good-quality feeds that mimic what Mother Nature provides. The natural breeding season for mares coincides with green grass—which has high-quality protein and adequate nutrients for cycling, pregnancy, and lactation for mares under natural turnout conditions.

"Mother Nature is smarter than we are. If we're trying to breed mares early, we must try to simulate the kind of diet they'd have during more optimal conditions,"

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Proper nutrient management is a way to ensure a successful pregnancy

Nielsen said. "I recommend using a commercial concentrate that's been balanced by equine nutritionists. It has the proper types and amounts of vitamins, minerals, proteins, etc. If you're trying to create a ration yourself, you might not achieve the same plane of nutrition."

### Cautions

Nutritional therapy for joint problems might be beneficial for an older mare that's physically uncomfortable, because if she's in pain she might not cycle, says Gill. However, don't go overboard on supplements in general.

"Stick to the basics. Don't feed herbs and all sorts of 'natural' products. We don't know how some of these might negatively affect the mare. Stay away from things that aren't proven to be necessary unless they've been researched and pro-

ven safe," Gill said.

Some supplements might be counterproductive to successful pregnancy. Keep it simple—and safer.

Also be cautious about following the latest fads. "You might cause harm in overdoing certain beneficial supplements," Nielsen said. "Omega-3 fatty acids seem to have a number of advantages for things like arthritis and reproductive issues in stallions whose semen doesn't ship well. But problems can occur if you try to extrapolate some findings across the board. For instance, omega-3 fatty acids inhibit prostaglandins (a naturally occurring hormone). This is one reason they can be helpful in reducing inflammation in the body. But certain prostaglandins are important in reproductive events, being part of hormonal messages."

If a horse owner has questions about


what might or might not be good broodmare nutrition, Cubitt said it's best to ask a veterinarian or an equine nutritionist rather than follow the latest fads or advice found on the Internet.

"When feeding any horse, we need to mainly think about good-quality ingredients and available sources of nutrients," she said. "It's important to use protein sources with high amounts of certain amino acids. Soybean meal or alfalfa can give you the highest level of essential amino acids (that the body cannot make for itself) that must be obtained from feed."

She also suggested using bioavailable sources of minerals, such as organic selenium or chelated minerals (chemically bonded to an amino acid to improve uptake by the digestive system), rather than something the body cannot readily absorb.

### Take-Home Message

Many factors play a role in equine reproduction, but proper nutritional management is a way to try to ensure successful pregnancy.

"Proper nutrition for the broodmare is actually very simple," Cubitt said. "It's more difficult to get a mare pregnant than some other species, so we want to do everything we can to set mares up for the best possible chance for pregnancy." 

Excerpted from *The Horse: Your Guide to Equine Health Care*. Free weekly newsletters at [www.TheHorse.com](http://www.TheHorse.com)

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# All Natural Horse Power

## Deadly Doping Meets Its Match Trainers praise natural alternative By: Mark Hansen

The pressure to win is so enormous that many horsemen resort to whatever it takes to get a piece of the purse or a decent sale... even if it means putting their horses' lives in mortal danger by doping them with illegal synthetic erythropoietin (EPO) drugs to boost endurance.

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Veterinarian Gary Smith said, "It's a problem all over the industry. There is no way horses should be put on (synthetic) EPO."

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With EPO doping, trainers try to boost the EPO effect to get a winning performance every time. They use a synthetic EPO (recombinant human EPO), even though the side effects can kill the horse. That's one reason why it's illegal. Fortunately there's another option. EPO-Equine is a safe, highly effective natural dietary supplement accepted by the racehorse community.

A Kentucky trainer who refused to give out his name, said, "I don't want my competition to know about this." He found EPO-Equine to be so effective that he's dead set against disclosing who he is, who his horses are, or even where he trains and races. He first started ordering a single jar of EPO-Equine once a month. Now he's ordering CASES each month. And he won't tell BRL exactly why. He said respectfully, "Sorry - no way."

Bioengineers at U.S. based Biomedical Research Laboratories (BRL), first discovered a completely natural EPO-booster for human athletes (and it's working miracles for top athletes and amateurs around the world). Seeing these results, horse trainers contacted BRL and asked about using this natural formula for their animals.

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