



## The Broodmare in Fall

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In the fall, broodmares are often relegated to the back 40 acres. At this time, foals have been weaned, and it is too late in the year to get non-pregnant mares bred again. An exception to this situation is the Tennessee Walking Horse breed that registers foals born in October, November and December as foals of the following year.

Mares are not the major emphasis in the fall since they have performed their task of foaling, lactating and being re-bred. They will not be center-stage again until foaling and re-breeding next spring.

After foals are weaned, most breeders tend to focus on weanlings and yearlings that are being prepared for shows, sales and/or performance in the case of long yearlings.

Fall management of broodmares is far more critical than some breeders realize and can directly impact foaling and re-breeding successes next year.

**Weaning.** Most foals are weaned between four and six months of age. Depending on foaling date, weaning can occur in late summer or early fall. If there are several foals, owners may wait until the younger foals are at least four months old to wean all foals at the same time. On large breeding farms, weaning may occur over several weeks to accommodate the difference in ages of the foals.

Weaning has been shown to be stressful to foals. Foals average daily gain decreases after weaning. Foals rebound from the stress of weaning in 10-14 days. Mares are also stressed at weaning but to a lesser extent than their foals.

A major management factor after weaning is getting lactating broodmares dried-up as rapidly as possible. Mastitis is not a big problem in mares, but a few mares do have mastitis.

It is not advisable to milk out mares after weaning. Milking out a mare only stimulates her udder to continue producing milk and prolongs the drying-up process. By

not milking out mares, the natural process will result in mares drying up more rapidly and being less stressed.

Mares' udders will be swollen, hot and feverish. If mares are uncomfortable, owners can use camphorated oil or udder balm, commonly applied to cows' udders, to relieve their hot, swollen udders.

It is advisable not to feed grain to mares during the drying-up process. Eliminating grain feeding of mares a week before weaning may also be helpful. Even if mares are thin, (See: Body Condition Score), there is adequate time to properly condition these mares before they will foal and be re-bred next spring.

Exercise is also important in helping the mare dry-up properly and rapidly. Mares should not be kept in stalls after their foals are weaned. Mares can be placed on lower-quality pasture that requires more time to graze. Mares not fed grain or hay will spend more time grazing, thus exercising more, which aids in the drying-up process.

**Pregnancy Checking.** Owners can more properly manage mares by pregnancy checking them in the fall. Even mares that were pregnant at 14-18 days and at 40 days post-breeding should be reexamined now. If mares were not pregnancy tested previously, it is imperative that they are checked in the fall. Fall pregnancy checking is a wise investment and pays extra dividends in saving feed and labor cost and results in healthier foals next year. While fall pregnancy testing is always important, it is critical when fall pasture is poor, there is a shortage of good-quality hay for winter feeding or feed prices are higher than normal.

Classification of mares as pregnant and non-pregnant allows owners to fine-tune their management. Pregnant and non-pregnant mares need to be managed differently in the fall and winter. Feeding is one key area. There often

is a tendency to feed all mares the same type and amount of feed. Barren mares require only a maintenance ration; whereas, pregnant mares need precision-managed feeding during their second and third trimesters.

One of the major advantages of fall pregnancy checking is the identification of mares that were previously pregnant and are now barren. Barren mares are often not given proper attention until late winter or spring just before being bred. This is too late to correct some problems and get mares pregnant in the breeding season. Fall is the time to make specific management decisions and actions regarding barren mares.

Barren mares selected to remain in the breeding herd may benefit from a uterine biopsy. A uterine biopsy of the mare's endometrium, lining of the uterus, will indicate the probability of her conceiving and maintaining a pregnancy. Mares with a Grade III biopsy are not likely to maintain a pregnancy. The best time for a uterine biopsy is in the fall after the breeding season and before mares begin transition into winter anestrus. Do not biopsy pregnant mares.

Breeders must decide whether they are going to keep or cull barren mares. Mares 16 years of age and older decline in their ability to maintain a pregnancy. Older mares become pregnant at about the same rate as younger mares, but fewer will be pregnant at 40 days post-breeding and in the fall.

Two key factors help breeders make this decision. Is the mare an economical producer; in other words, are her foals profitable, and is she a genetically superior producer? Any mare that is not an economical producer certainly must be considered for culling. Those that produce below-average-quality foals will not contribute to a breeder's success.

Fall pregnancy checking is important in mares that grazed endophyte-infected fescue pastures during breeding and were not pregnancy tested earlier. Mares grazing endophyte-infected fescue pastures in the breeding season have a tendency for early embryonic death.

**Artificial Lights.** Barren mares with high probability of maintaining a pregnancy need to be managed to have the greatest possibility of becoming pregnant next year. This includes proper nutrition, body condition, health and reproductive management. It is advisable to place these mares under artificial lights in November or at least by the first of December. Artificial lights will cause these mares to come into estrus and ovulate about six to eight weeks after being placed under them. The advantage of this process is the barren mare can be mated earlier and more often during the breeding season which enhances her chance of becoming pregnant. Mares placed under lights in November have one or two estrous cycles to combat infections and eliminate difficult problems before being bred.

Placing pregnant mares due to foal in March and April under artificial lights will shorten the length of their gestation by 10 days. By foaling earlier, they can be re-bred sooner in the breeding season.

**Body Condition Score.** Another management tool is to body condition score all broodmares in the fall. Owners can not only separate mares into pregnant and non-pregnant groups, but also place them into groups based on their

body condition score. For example, pregnant mares could be grouped as thin (BCS 4 or below), moderate (5-7) or fat (8 & 9) for proper management.

Body condition is stored body fat. Stored body fat is used later by the broodmare as an energy source for the rapidly growing fetus in late pregnancy and for milk production in early lactation. Because of the large size of the fetus, it is difficult for pregnant mares to consume adequate feed to meet both the nutritional needs of the fetus and the mare herself. The fetus has first priority over feed nutrients. The fetus makes 75 percent of its growth in the last trimester. Early lactation has a greater nutritional demand than late pregnancy.

Mares will store body fat until about 270 days of pregnancy. After which, their BCS will decline slightly as the stored fat is used for fetal growth. This decline continues into lactation, especially if the mare is a good milker. Lactating mares tend to lose body condition during the first 120 days of milk production.

Pregnant mares with a BCS of 4 should be managed differently from those with a BCS of 8 or above.

It is possible to add one BCS unit to a mare in 30-45 days. Heavy grain feeding increases the risk of colic and laminitis. Caution and good judgment are required in this process. Mares need to be in the proper body condition desired at foaling (5.5-7.5) at the start of their third trimester. Mares that have a BCS of 4 or less and are late in their second trimester may need to accumulate body condition faster, which will require feeding more grain. It is normally safe to feed 0.5 pounds of grain per 100 pounds of body weight. A 1,200-pound mare would be fed six pounds of grain daily. If more than six pounds of grain are fed daily, mares should be fed twice per day. These same mares (BCS 4) early in their second trimester have longer to reach a desired body condition, so they can be fed less grain.

Pregnant broodmares make about 70 percent of their weight gain of pregnancy in the second trimester between 111 and 222 days. Mares in their second trimester should be fed to reach a BCS of 5.5-7.5 by the start of their third trimester at 220 days of pregnancy.

Mares with a BCS of 5.5 to 7.5 foal without problems and are easier to get pregnant than mares that are thin with a BCS of 4 or below. There is no reason for broodmares to have a BCS of 8 (fat) or 9 (obese). These fat mares do not milk as well, and their foals do not grow as rapidly as mares in a moderate BCS range of 5-7.5.

BCS of non-pregnant mares is also a helpful tool, but not as critical as with pregnant mares. An owner has several months to get non-pregnant mares in the desired body condition (5.5-7.5) before the next breeding season.

No detrimental breeding problems occur in mares with a BCS higher than 7.5; however, these fat mares are at greater risk of colic and laminitis, and it is not economically good management to have them above a BCS of 7.5. Many non-pregnant mares will have a BCS of 5-7.5. They must be managed in the fall and winter to maintain this level of body condition without getting fatter. Non-pregnant mares with a BCS of 8-9 in the fall should be placed on a diet to reduce their BCS to at least a 7.5. Owners have

several months before the breeding season to accomplish this feat. These mares should be on lower-quality fall pasture without grain. In winter, they should be fed an average or slightly lower-quality hay without grain.

**Foaling Date.** Pregnant mares can be further subdivided depending on when they will foal. Mares that foal early in the year, especially if they have a BCS of 4 or less, need immediate intense management to increase their body condition before foaling. Likewise, overfat mares (BCS 8 and 9) need critical management. If they foal early in the year, they should be managed so as not to gain any more body condition. It is not advisable to have mares lose body condition in their last trimester. If such mares (BCS 8 or 9) are early in their pregnancy, owners have time and options to better manage them. Use of pasture and forage with little or no grain could result in these mares having a BCS score of 7.5 or less when they foal. These mares can graze on lower-quality fall pasture without grain so they will be nearer a body BCS of 7.5 at the start of their last trimester.

**Feeding.** As noted, feeding of broodmares is important in the fall and winter. The general tendency is for broodmares to be overfed. Allowing mares to get too fat in early pregnancy is especially a problem. Mares that do not milk well and those that are not pregnant have a tendency to be too fat.

Fall pasture should be the basis of the feeding program for all broodmares. Pregnant mares with BCS of 5.5-7.5 need to be maintained at this level. Normally, high-quality fall pasture will be sufficient. Pregnant mares may even improve their BCS on good-quality fall pasture. Pregnant mares are more efficient than non-pregnant mares.

This may not be the case if pasture is limited or of poor-quality. Mares may require some grain to maintain their body condition. Always feed the smallest amount of grain to accomplish the nutrition level required.

Thin mares or those on lower-quality fall pasture may require an increase of 10-15 percent in grain fed above their nutrient needs. Non-pregnant mares can be well maintained on good-quality pasture alone. Different nutrient needs are the reason that pregnant and non-pregnant mares should be managed separately. The best-quality pasture should be reserved for weanlings.

Astute mare owners know the reproductive and lactational histories of their mares. Mares that are known to be heavy milkers can be preconditioned in the fall and winter. These mares can have a BCS of about 7.5, since heavy lactation will reduce their body condition.

While the mare can store body fat for later use, she has little reserves of protein that can be used for fetal growth and/or milk production. In the second and last trimester, from 111 days to foaling, protein intake is important. The total ration should contain 10-12 percent protein, especially in the 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> months of pregnancy. If legume forages are fed, a 10-12 percent protein grain mix is adequate. One should feed a 12-14 percent protein grain mix with grass hays. Since the mare cannot store much protein, feeding a 16 percent protein ration is not recommended during pregnancy. Proteins are made up of a se-

ries of amino acids. Protein quality is having the correct amounts of essential amino acids in proper ratios to each other. Research indicates that protein quality may be more important in early pregnancy than was previously thought. A high quality protein such as soybean meal, alfalfa hay or milk by-product sources should be fed in the last three months of pregnancy as well as in early lactation.

It is important that all mares have an adequate source of clean, fresh water and trace mineralized salt at all times.

**Deworming.** Deworming is important in broodmares. In the Southeastern states, it is recommended that mares be dewormed from September to March. The major internal parasite of horses is the small strongyles. The infective stage of the small strongyles is not active in hot, dry summers. Since there is no need to deworm broodmares in summer, broodmares should be placed on a strategic deworming program in the fall.

**Vaccination.** Mares are normally vaccinated in the spring for the common horse diseases. Equine herpesvirus Type 1 causes virus abortion, which is the single most important infectious cause of abortion. Pregnant mares should be vaccinated for Rhinopneumonitis (virus abortion) in their 5<sup>th</sup>, 7<sup>th</sup> and 9<sup>th</sup> months of pregnancy. Depending when a mare became pregnant, possibly the 5<sup>th</sup>, probably the 7<sup>th</sup> and certainly the 9<sup>th</sup> month of pregnancy will occur in the fall or winter.

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### **West Nile Virus Back**

West Nile Virus has struck again in 2003. There have been 58 confirmed WNV positive horse cases reported in 35 counties. Only eight horses have died for a death rate of only 14 percent, which is lower than the national average.

A large number of the positive horses as well as bird cases have occurred this year in East Tennessee and the plateau area. This differs from last year when West Tennessee was the focus area.

Horse owners need to plan to give a WNV booster in 2004 to all horses that have been vaccinated for WNV and to vaccinate horses that previously were not vaccinated for WNV.

Owners are urged to also vaccinate their horses for Eastern Equine Encephalomyelitis and Western Equine Encephalomyelitis in late winter to early spring.

There have been eight human cases of West Nile Virus so far in 2003. Fortunately, there have been no human deaths.

Individuals can keep current on the WNV situation in Tennessee by visiting the Department of Animal Science WNV Web page at <http://animalscienc.ag.utk.edu/horses/WestNileVirus.htm>.



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### **Tennessee Horse Express**

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