

Feeding the brood mare

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Good nutrition and proper exercise will ensure that brood mares remain healthy, conceive early, foal easily and lactate adequately. Feed requirements, however, vary with each stage of the breeding cycle.

Feeding for conception

Nutrition plays a very important role in reproductive performance, contributing greatly to hormonal output, which regulates the oestrus cycle.

Mares should be gaining weight during the joining period. Research has shown a 60% increase in conception rates in mares gaining weight over mares losing weight during this period. It has also been found that embryos in mares on a low plane of nutrition commonly die between the 25th and the 30th day of gestation. These problems can be largely overcome by increasing the mare's plane of nutrition 30–45 days before the start of the breeding season, and continuing at this level until you are sure she is in foal.

Probably one of the most common problems facing the horse owner is that of the overweight mare. These mares must be allowed to lose weight over the winter period, and should then be placed on an improving plane of nutrition to encourage the onset and regular return of oestrus. This is a particular problem with maiden mares, which may need special treatment.

Mares must have regular exercise to make them fit at breeding time. If kept in a small backyard paddock or a stall, they will need lunging or some other form of regular exercise to stop them getting too fat. Ideally, mares should be kept in a large paddock with undulating terrain, where they can be encouraged to keep themselves fit. Feeding at some distance from the water supply will encourage movement between feed and water, and help maintain fitness.

In general, good quality pasture is sufficient to maintain the mare. Fortunately, the breeding season tends to correspond with the peak of pasture production in spring; however, if supplementary feeding is required, it should start well before the horse begins to decline in condition, or at least 30 days before joining.

Gestation

During the first two thirds of pregnancy, the foetus is not very large and the nutrient requirements of the mare are not much more than those for maintenance. Half the growth of the foetus takes place in the last 10 weeks of pregnancy, and it is at this time that feed supplements must be increased significantly.

Since foetal growth consists largely of muscle and bone, additional amounts of protein and minerals are needed. These may be provided by increased amounts of good quality pasture. Where this is not available, feed good quality lucerne hay or chaff, as well as grain. The mare should not be too fat just before foaling, however, as this may lead to difficulties during birth.

Lactation

The mare's need for all nutrients almost doubles after she has foaled. These must be provided if the mare is to produce sufficient milk for the foal, and gain condition to conceive again.

Lactating mares need about 13–14% crude protein. Pasture cannot usually meet this need, especially when it dries off in late spring and summer. Good quality lucerne hay or chaff should again be fed, along with sufficient grain to meet the energy needs of the mare.

Lactating mares in good condition will generally have a short oestrus about 9 days after foaling, but this can vary between 3 and 16 days after foaling. Under favourable conditions, the mare can conceive during this period, saving valuable breeding time, but average conception rates will be only 20–25%. The mare will not return to oestrus again for at least another 16 days, but she may



take more than 55 days. Good nutrition here is most important to ensure an early and regular return (25–30 days from foaling).

Table 1: Comparison of the more commonly used feeds ('as fed').

Feed	Crude protein (%)	Metabolisable energy (MJ/kg DM)
Soybean meal	50	12
Peanut meal	42	11
Cottonseed meal	28–43	10.5
Skim milk powder	36	12.8
Linseed meal	30–35	11.5
Lupins	28–35	13
Bran (oaten)	8	9
Lucerne hay	15–20	8.5
Oats	10–12	12.5
Sorghum	9	13
Barley	10–12	13
Maize	9–10	13.5
Pasture hay	11	8.5
Wheaten hay	6	8
Oaten hay	5.8	9.3

Peak lactation usually occurs 8–12 weeks after birth of the foal. This means that, after foaling, mares should receive increasing amounts of feed, so that they are steadily gaining weight. At peak lactation, mares of light breeds can produce 14–18 kg of milk per day.

What to feed

Tables 1 and 2 list average composition of feeds and requirements for dry, pregnant and lactating mares, but should only be used as a guide. Adjustments must be made to meet the individual requirement of the horse.

As a starting point, a ration of equal amounts of roughage and concentrate can be fed to pregnant and lactating mares. The amount to be fed will depend on the availability and quality of the paddock feed, and this can only be determined by gauging each individual's performance on the ration fed.

The type of feed to be given will be determined by the quality of existing paddock feed, bearing in mind that lush spring feed is more likely to be deficient in energy than in protein, and dry summer feed is more likely to be deficient in protein.

As a guide, table 1 gives a comparison of the energy and protein content of some of the more commonly used horse feeds; table 2 gives the feed requirements for mares of varying weights and status when full handfeeding is required. When used in conjunction, the tables will allow a balanced ration to be achieved, providing the basis

Table 2: Daily nutrient requirements for mares¹

Body weight (kg)	Daily feed (kg)	Digestible energy (MJ)	Digestible protein (g)	Ca (g)	P (g)
Maintenance					
400	6.3	58	540	18	11
500		69	630	23	14
600	8.5	79	730	27	17
Last 90 days of pregnancy					
400	6.2	65	640	27	19
500	7.4	77	750	32	23
600	8.4	88	870	40	27
Peak of lactation					
400	8.4	98	1120	40	27
500	10.1	119	1360	50	34
600	11.8	139	1600	60	40

¹ Figures obtained from *Nutrient requirements of horses*, 4th revised edition, 1978. Washington, U.S.A., National Academy of Sciences, National Research Council. Series: Nutrient requirements of domestic animals, no. 6.

for individual adjustment.

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