

## Equine News Q & A

**Q My gelding is confined to his stall about eight hours a day. During that time he has access to grass hay that is leafy, green, and sweet-smelling, but he doesn't always clean up the hay. Should I simply pile up the hay he has refused in the corner of his stall and allow him to pick through it the next day, or should I give him a fresh helping each day?**

A If a horse is leaving hay, too much is probably being fed, especially if he is not interested in good-quality, leafy forage. During the 16 hours that he is out of the stall, he may be filling his belly with grass, so he is likely using his stall time to relax, perhaps even sleep. Alternatively, he may simply prefer grass to hay.

Feed only as much hay as the gelding will eat and then gradually increase the amount when he needs more, such as during winter when pasture quality may be deteriorating. Once a horse has chosen not to consume certain hay, there is little chance he will go back and eat it. This is doubly true if there is a fresh serving on top.

There is also a chance that he has soiled the hay he is leaving behind, making it unappetizing. Weeds or stems could also be part of his discards. It would be best to clean out what he doesn't consume and try feeding less.

If soiling is an issue, hay can be placed in a haynet. This will make it more difficult for the horse to strew hay throughout the stall. In addition, cleaning the stall may become less of a chore.

**Q I often find lecithin in supplement ingredient lists. What is it?**

A Lecithin is a phospholipid (fat) composed of saturated, unsaturated, and polyunsaturated fatty acids. Lecithin also contains choline, a factor necessary in the production of acetylcholine. As a neurotransmitter, acetylcholine is an essential component of the nervous system.

The lecithin found in horse feed products is usually a by-product of soybean oil processing. In its crude state, lecithin is usually a white powder.

Horses do not find lecithin particularly tasty. In a trial conducted at Virginia Polytechnic Institute and State University (VPI), researchers gave horses a choice of four concentrates in a cafeteria-style setting. The concentrates had 10% added fat as corn oil; lecithin and corn oil; lecithin and soybean oil; or lecithin, corn oil, and soybean oil. Preference was clearly for corn oil, followed by lecithin

and corn oil; lecithin, corn oil, and soybean oil; and lecithin and soybean oil, respectively. Palatability, however, is usually not an important concern because lecithin is added to feeds and supplements in small quantities.

The same researchers measured behavior differences of horses being fed a concentrate with 10% added fat as corn oil; soy lecithin and corn oil; or soy lecithin and soybean oil. Spontaneous activity was measured by a pedometer, and reactivity was evaluated subjectively as responses to pressure, loud noise, and sudden visual stimuli. When compared to horses fed a control diet, the lecithin-fed horses had less spontaneous movement and were less reactive to visual stimuli. More ethological research needs to be performed on lecithin before it can be reliably used for behavior modification.

Another useful application of lecithin may be as a stomach protectant. A pectin-lecithin complex was found to significantly reduce gastric ulcer formation in a small group of horses. Like lecithin's effect on behavior, this avenue of research needs to be explored more thoroughly.

**Q What is a horse's maximal heart rate, and how does it differ from a human's?**

A In mature horses, the resting heart rate is generally 30-50 beats per minute (bpm). Heart rate rises incrementally as exercise intensity increases. In all-out efforts, maximum heart rate will usually be in the range of 220-240 bpm. This value is generally constant in all mature horses and does not decrease significantly with age.

At rest, the heart rate of an adult man or woman is typically 60-90 bpm, give or take a few beats. In well-trained athletes, resting heart rate may be as low as 40 bpm. Maximum heart rate is not so easily pinpointed in humans, as it's more dependent on age. This simple formula can be used to figure maximum heart rate:  $220 - \text{age} = \text{maximum heart rate}$ . A 30-year-old man's maximum heart rate would be approximately 190 bpm. Obviously, maximum heart rate declines with age. ☺☺

**Do you have a question you'd like answered by one of KER's nutritionists?**

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