Oats: The Good, the Bad and the Ugly

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The good

Oats are a wonderful source of energy and have fuelled hard working horses for centuries. They are very palatable and have the most highly digestible form of starch of any of the cereal grains. Oats contain a moderate level of crude protein, 5% crude fat and a digestible energy of 13 MJ/kg.

Horses digest 90% of oat starch in the small intestine, whereas only up to 35% of the starch in corn and barley is digested there. Oats can be well utilised by horses in their raw whole state, whereas other cereal grains need to be mechanically treated (crushed, milled or rolled) because their seed coats are too hard to buffer stomach acid.

Because oats can be fed raw and whole, they are easier to store and lose less nutritional value during storage than cracked/milled/crushed grains. Once the seed coat is disrupted, the starch from corn and barley to be cooked (boiled, steamed, popped or micronised) for it to be well digested.

There are many benefits in choosing oats as a supplementary feed for horses. They can be fed whole, thereby improving the freshness of the starch granules and cutting the cost of processing. They’re also a lower mycotoxin risk than some other cereal grains, such as corn and barley. Because horses can digest whole oats, they benefit from eating the highly fibrous husk. Eating whole oats encourages chewing, which stimulates saliva production, helping to buffer stomach acid.

Oats are high in starch, which is one of the reasons they provide energy to hard working horses. Any undigested starch passes from the small intestine into the large intestine or hindgut, where it causes acidity and disrupts enzymatic activity. Oat fibre is rich in soluble glucans, which may interfere with digestive processes leading to disturbed gut function.

Numerous researchers have linked high starch intake to colic, gastric ulcers, tying up and laminitis. Sudden changes in starch intake influences the gut microbial population, fermentation products and pH balance, which can cause colic and laminitis.

Nutritionists recommend that new feeds be introduced by gradually increasing their volume over a 2-3 week period. The maximum amount of starch included in a single meal should not exceed 2g starch/kg bodyweight. Therefore, horses on high-starch/ grain diets should be fed multiple small meals per day, rather than a single large meal.

Oats have a naturally high fat content of around 5%. The fatty acids in oats are much higher in pro-inflammatory omega 6 than anti-inflammatory omega 3 fatty acids (1.9% linoleic acid versus 0.07% linolenic). Therefore, when oats form a large part of the diet and hay, rather than fresh grass, is the predominant form of roughage, an omega 3 rich source, such as fish oil supplements or linseed, are required to mimic the fatty acid profiles of fresh pasture.

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Mechanically treated grains may also be more susceptible to contamination with mycotoxins, moulds and insect infestations.

Misuse of cereal grains, such as oats, can increase the incidence of some forms of developmental orthopedic disease (DDOD) in young stock. Overweight and rapidly growing foals fed high-starch and mineral-imbalanced diets are at higher risk of developing problems.

Laminitic and insulin-resistant horses should not be fed high starch feeds, such as oats. Overweight horses should not be starved, but be allowed to lose weight while consuming low sugar, low-starch, forage diets - approximately 1.5% of bodyweight in dry matter per day, made available all day via slow feeder hay nets or with use of a grazing muzzle. Oats or any other high energy feed are not suitable for these horses.

Aged horses or those with poor teeth will have difficulty chewing oats sufficiently to break the seed coat for good digestion. If oats are included in the diet of horses with impaired chewing ability, they will need to be rolled, crushed or flaked to allow gut enzymes access to the goodness within the grain.

It’s horses for courses with oats. When used to supplement the right horses and fed in the right proportions, they play a valuable role in the equine diet, but oats are not every horse’s cup of tea!

ABOUT THE AUTHOR: Larissa Bilston, BAgSc (Hons), has worked as a scientific communicator and nutritionist, developing horse feeds and providing nutritional advice to horse and dairy clients. Larissa is passionate about helping people make good decisions regarding horse feeding and welfare. To find out more, go to: www.equinevitmin.com

The bad

Oats are relatively deficient in the essential amino acids methionine and lysine that are commonly limiting in the diets of breeding and growing horses. Therefore, breeding and growing horses usually need a protein supplement added to a diet of oats and grass to ensure their daily requirements of essential amino acids are met. This can often be achieved in the diet naturally with full fat soybean meal, rather than a specific amino acid supplement.

The ugly

Oats aren’t a bad horse feed, but they are definitely not suited to every horse. The ugly side of oats is usually more operator error than anything inherently bad in the grain.

Oats are often accused of making horses hot. Basically, oats are often given a bad name when horses behave badly due to being fed too much energy for the work they perform. When horses eat more calories than they burn, they put on weight (fat) and become highly energetic; they feel ‘full of themselves’. This behaviour is likely regardless of the form the excess calories are provided in.

However, some individuals seem to be more sensitive to high GI feeds (glycemic index) and experience behavioural issues following an increase in blood glucose levels. Research indicates that blood glucose and insulin levels are only moderately influenced when horses are fed high-starch diets (more than 1.1g starch/kg bodyweight). Horses who ‘fizz’ after a starchy meal might be more suited to a smaller amount or a low-starch form of energy, such as beet pulp, oil, soy hulls or additional forage.

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