

WHOLE OATS, THE PERFECT HORSE FEED?

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The topic of equine nutrition was a featured presentation at the 2003 International Conference for Strasser Hoofcare. Prepared by Dr. med. vet. Dorothe Meyer of IWEST, Germany, every stage of the horse's digestive process was covered in detail.

One of the highlights was the information that in order for the enzymatic processes of the small intestine to properly function, there has to be a limited acid concentration. This partly depends on the starch content of the feed. When a high ratio of starch arrives in the small intestine, the contents of the small intestine become more acidic, to facilitate the digestion of this starch. However, below a pH of 6 (too acidic) the enzymatic breakdown doesn't always happen, and things like gas and ulcers can occur. This is more likely to occur when feeding large quantities of cereals that contain starch, which is difficult to break down, such as corn and barley.

The enzymatic consequences of feeding large amounts of corn and barley is a disruption of the pH of the small intestine, which leads to the transition of undigested starch into the large intestine (colic, gas, acid faeces, insufficient absorption of minerals).

Which leads us to oats, which have 90% starch digestibility, compared to around 30-35% for barley and corn. So when oats are fed (in appropriate amounts), they are easily broken down in the small intestine, and the enzymatic processes are not disturbed.

Whole oats are ideal because:

- high proportion of mucilaginous substances
- high proportion of husks
- high prececal starch digestibility even before breakdown
- high fat content
- ideal to chew taking into account the horse's dentition
- very high palatability

Another reason for whole oats (instead of crushed) is that you need the intact kernel in order to receive the fat content of the whole grain. The husk of the whole oat is very important for correct chewing and digestive processes.

A horse with good teeth and proper dental care will chew and digest the whole oat, leaving only husks in the manure. If oats are coming out undigested, there could be a tooth or digestion problem going on, so be sure to investigate that.

How many whole oats? Of course, that would depend on the workload. If the horse was not worked and was on good pasture, perhaps none at all. If the horse receives significant exercise (as all our horses should) and/or is not on pasture (hay only), or is recovering from a problem, it will most likely benefit from the addition of some whole oats to its diet.

It was recommended that oats be fed broken up into many small meals, with a maximum of up to 2.4 kg per meal for a 600 kg gram horse (converts to around 5 lb per meal for a 1320 lb horse - remember that is a maximum). Also, the oats should be introduced gradually, of course.

German SHP Peter Speckmaier told me that when horses are fed too many oats, they get lazy, and not too energetic. I imagine he's speaking from experience so you can tell if you are giving too much when the horse lacks energy. I also heard from quite a few people that the addition of whole oats has increased hoof growth. I've fed whole oats for many years, but not in any significant quantity, so I upped the oats on my own horses. Things are looking very good so far.

Dr Meyer contends that a problem with sport horses today is that they often do not have a sufficient supply of the fatty acids to fulfil their energy requirements, and actually panic from the feeling that they do not have the energy they need, and refuge in flight. Therefore, some horses may appear hyper and uncontrollable (and then the owner cuts down on the oats!), when what they really need are more oats to give them enough energy to do their job, and they won't be so hyper.

More interesting information from Dr. Meyer was that the job of the bacteria in the large intestine is to produce the volatile fatty acids which are the horse's very energy source. Dr. Meyer said we should avoid anything that will harm these beneficial bacteria, as anything that endangers them, endangers the very life of the horse (one of the reasons to be so careful with antibiotics!).

Jane Kempton, UK SHP, comments about her experiences feeding whole oats to her horses: "I have noticed a change and relaxation in his being since he has been on the oats for nearly four months. Hoof growth has increased and the coats of all the horses look fantastic. They don't grab at the buckets quite the same as they did before, and Hugo and Mouse produce enough dripping saliva to turn the bowl into a sort of porridge as they are eating. It's being digested even before it goes into their mouths!!

"The droppings are slightly different, too. In the beginning quite a few oats were coming out whole, simply because in their excitement, the horses weren't chewing them properly. Now it is only a few husks that appear. Feeding whole oats is a complete novelty in England. You have to order the bags specially as there is no demand. To start with, it seemed a huge amount to feed, but our horses are doing fine, too well, in fact."

Erica Lynall, UK SHP, told us about feeding whole oats to her formerly foundered mare: "My mare, Moose, has been on whole oats for 2 years, but I upped the amount in the summer after talking with Peter Speckmaier. I fed too much, and she did start to get lazy it was really weird, and I thought something was wrong with her. Now she's on the right amount, and she's full of energy and fantastic to ride. Before that, I wasn't feeding enough.

"Peter told me that ammonia in her liver was causing her to be sensitive on stones (she's ex laminitis). He said the ammonia seeps out through the skin, eyes and lamellae, but it actually sits in the lamellae and causes this sensitivity. Moose has suffered runny eyes since I've known her, but they are 85% better now (the eyes are on the liver meridian). The protein and fat in the whole oats helps heal the tissues, and I've also been treating her liver with herbs and homeopathics to speed things along, as otherwise it could take 6-7 years of natural living! I've also added extra lysine & methionine, as these are 2 amino acids oats are low in. This makes for a more complete and digestible protein.

"Now, she is stomping over stones like they aren't there! I can hardly believe it, as I've battled with this for so long. Back in the summer she was walking on them okay, but carefully, and now there is a big, big difference. Her eyes continue to clear up, too, and she is much easier to handle, as she is more mentally alert.

"I've had 5 particularly bad laminitic ponies to trim this past summer, and I told all their owners to start using whole oats. They were a bit worried, as most vets would keel over at this idea, but they trusted and fed them. The healing has gone so much faster and easier for them since the oats. They've all had crests and fat deposits, which are softening and disappearing.

"In a book on human nutrition, by John Gray, he states that beer bellies are actually a sign of liver problems/toxicity. The reason they are also known as "middle-age spread" is that it takes until middle age for the liver to start causing this bloated appearance. I've noticed masses of horses in their teens who appear to be fat, but on second look actually just have a pot belly. John Gray states that no amount of exercise gets rid of this, only detoxing the liver will!"

Note: Organic whole oats are highly recommended if they are available.

PART TWO

Last issue featured some important information about oats from a presentation by Dr Dorothe Meyer of Germany. Whole oats appear to have characteristics that make them ideal for general equine nutrition. Here are some more details on the feeding of oats, as well as testimonials from Strasser Hoofcare Professionals after their recent experiences feeding oats.

How much whole oats?

Based on Peter Speck-maier's (SHP, Germany) information, here are some whole oat feeding guidelines for a typical horse, with natural living conditions (but not the ideal, varied acreage), and receiving a little bit of exercise (but could use more):

Horses weight	Oats per day
400 kg / 881 lb	1.25 - 1.5 kg / 2.75 - 3.3 lbs
600 kg / 1322 lb	1.5 - 2 kg / 3.3 - 4.4 lbs

For horses who do no work at all, feed just a little less oats than the amounts above. For high performance horses, distance horses, etc, up to 50% more oats can be fed. The above values are for horses kept on pasture or paddock, add 10%-20% more for a stall-kept horse (but we don't have any of those, right?), who expends more energy due to the stress of confinement and/or the stress of having improper hoof form (still too common).

Feed less oats when horses are on varied, unimproved pasture with a wide variety of plants.

The correct amount could vary with each individual horse. These are rough guidelines only. Oats should be introduced gradually, of course, and slowly increased to the appropriate amount.

Naturally kept horses will require less oats than stalled horses do. Feed the oats in as many small meals as is possible to do. Ideally, if you needed to feed 5 lbs per day, you should feed 10 meals of 1/2 lb per meal. Realistically, this is usually not possible. Try to split the oats into at least 2 to 3 feedings per day. If it is only possible to feed one time per day, you should NEVER exceed 5 lbs per meal for a 1350 lb horse, or 4 lbs per meal for smaller horses.

Feeding more per meal than this can lead to undigested starch passing through to the large intestine and disrupting the digestive system (gas, colic, acid faeces).

Now by this point, many horse owners' jaws have dropped - what, feed the pasture potato POUNDS of oats per day? While the feeding of oats is nothing new, and horsemen throughout the ages have relied on it, this advice contradicts the modern popular model of feeding, which relies on "sweet feed," if any grain at all is fed. If oats are fed, they are measured by the cupful rather than pounds! And when the recommendation goes so far as to say that all horses, especially foundered ones, should receive this amount of oats, the eyebrows are really raised.

Peter recommends feeding hay even to horses on pasture, because grass has too much protein in the spring, which makes horses lazy, and too little protein in the fall, which makes them retain water. However, "wild" pastures (not improved or over-grazed) don't have as much problem with their protein levels. Wild, unimproved pasture also provides more varied nutrition, so the amount of oats can be reduced.

Older horses with poor teeth that can't chew whole oats properly can still reap the benefits if you can cook the oats before feeding. This can be accomplished simply by pouring boiling water over the bucket and letting it sit, covered, for a while.

Calcium/Phosphorous Balance

When adding oats, the calcium/phosphorous balance of the overall diet needs some attention. Many nutritionists recommend the optimum ratio for a mature horse to be between 1.5-1 and 2-1 calcium to phosphorous. Oats are higher in phosphorous, and can have an inverted calcium to phosphorous ratio of 1 to 5 (1 part calcium to 5 parts phosphorous), so if you feed a lot of oats you will need to balance this out with the correct amount of calcium. Most grass hays have only a 1-1 or 2-1 ratio, while legume hays can have very high calcium, with a 5-1 or higher ratio. You can feed a small amount of lucerne (alfalfa) as a 'supplement' to increase calcium. Many people also feed beet pulp because of its high calcium ratio (6-1). Another solution is to provide a free choice calcium mineral supplement. Some horsemen offer calcium carbonate, limestone, or bone meal, but the source and purity should be evaluated. Any free choice mineral mixes should have a 2-1 calcium to phosphorous ratio.

Oat Feeding Testimonials

Still sceptical about adding pounds of oats to your horse's daily diet? Remember that grain does not cause laminitis or founder, poor hoof form does.

But won't your horse get fat? Or won't he get too hot and hyper? That's not what the feedback seems to be from people who are testing it out. Keep in mind, however, in every testimonial presented, that the horses have, 1) natural living conditions, and 2) correct hoof form. Without these vital conditions, the results may not be so positive.

Tracy Raffaele, SHP, California: "I have watched several portly horses (including my own) lose fat without an increase in exercise by just adding oats to their diet."

Suzanne Foster, SHP, Wisconsin: "I have watched a foundered Cushing's gelding gain muscle mass and lose a huge crest over the course of four months. He gets about 8 pounds per day, broken into 4 feedings. He is also ridden (mostly cantering and some trotting) for an hour or so each day, broken into 2 or 3 rides. He continues to look more healthy each day - brighter eyes, more willingness to move (obviously). Additionally, two skinny horses that required quite a bit of oats initially, seem to be holding with about half what they first

received. Finally, my personal mare that had 'fat bulges' above her eyes lost them when I doubled her oats intake. Those bulges have not returned after 2 months. I'm sold."

Jane Kempton, SHP, United Kingdom: "I have a 24 year old who suddenly lost weight about six years ago and I couldn't get it back on him. De-shoeing helped a bit, but he has always dropped off in the winter. Bareback riding was painful, for both of us I should think. He isn't looking thin anymore (after feeding oats)! I rode him today for the first time in months and was really surprised at how much muscle he has rebuilt along his back. My friend usually rides him about twice a month and that is all he gets (I know, bad SHP that I am - not enough exercise). I could really notice the increase in muscle tone. As you say, the truth will come out in the long term, but so far they are all doing fantastically. Eight months into feeding whole oats now."

Frances Guthrie, SHP, British Columbia: "The horses are doing well. My 'Pillsbury Doughboy' gelding has definitely changed from pudgy-soft fat to firm, round horse with no change other than the oats."

"Brio, a 24 yr old quarter horse mare, has always had a huge 'hay belly'. With the addition of oats to her diet, her figure is now what I would consider average for an old, out-of-shape brood mare. I am curious to see how she responds to the continued feed change. I will be removing all other grain and replacing with oats and minerals only this spring. I think her digestion is better, as she doesn't seem to be eating huge quantities of hay as she did in the past."

"Blaze, my 31 yr old mare, has been very interesting to observe, and I believe the extruded feed was causing fluid retention. I had been feeding 1/2 oats, 1/2 extruded, and when I noticed she was too fat, I reduced the extruded feed and continued with the same amount of oats. She looked different in just a few days. Then I had reason to think she was losing weight, so I increased the extruded, and in about a week she seemed 'puffy'."

"A rehab gelding arrived here quite underweight with considerable muscle loss along his topline. He is a picky eater and never seems to eat as much as I think he should, even leaving grains. I started him on oats very conservatively, slowly increasing the quantity. His weight gain was slow and steady, but not what I was hoping for. I recently increased his ration and am noticing a nice improvement in him."

"My sister recently fed her gelding a small ration of sweet feed and he promptly rubbed out his tail hair. For years she was convinced he was sensitive to mosquitoes, but this was the middle of winter when we have no bugs! As soon as she went back to oats, he quit rubbing and scratching."

"A new client has started her gelding on oat, she looked overdue to foal twins. I don't know if I've ever seen a gelding with a belly that big, and she is certain he is slimming."

Christina Kuszniir, SHP, New York City: "One of my clients, whose horse has been barefoot for 18 months with another trim and tender on gravel the whole while, has recently reported that he is now much sounder on gravel after only a week or two of switching to whole oats. He has been Strasser trimmed twice to date." Of course, the trim may have something to do with it, but last issue Erica Lynall wrote that her mare, Moose, was no longer sore on stones after increasing the oats. She said that she actually got the idea to make the oats suggestion to this client after reading about Erica's experiences.

Bob Creel, SHP, Florida: "I switched my horses to whole oats over a year ago, and they seem to be healthier. With the same amount of exercise, they lost excess fat and gained muscle."

Christina Martin, SHP, British Columbia: "I for one will continue to feed oats, but then, I always did. I just increased the amounts. I haven't found my horses to get 'hot' with the whole oats, but then I don't feed that much as my horses roam a lot of unimproved acreage. This, according to both Peter (Speckmaier) and Marijke (van de Water), supplies them with a lot of varied amino acids from wild plants."

Erica Lynall, SHP, United Kingdom: "My mare on oats is just an awesome ride! Every horse/pony I've put on oats looks fabulous, and those with fluid retention/fat deposits have gotten better. There are one or two owners who were sceptical, and their horses are still fat, plus the hooves haven't changed enough.

"Over the last winter, I've requested owners use oats for 9 'laminitis- prone' ponies and horses. Obviously, they aren't 'laminitis prone' now! They are all getting better. One of them has definite Cushing's, and she is shedding out buckets of hair at the moment. She is also on specific homeopathies, but the addition of the oats caused it all to work better."

Julie Leidl, SHP, Australia: "I, too, have upped the oats. My QH 16 yo mare has come off pasture and is now at home on some grass (not much), pasture hay and now more oats than I have ever fed before, although it is a feed that I have used for years. I have actually ridden this horse a couple of times in the last week, and she felt wonderful and not at all 'hot.' In fact, she has never felt better.

"I am also feeding oats to a client's horse that I am caring for (coffin bone protrusion), and she seems to be doing really well, too. I'm trying to hold the weight onto this horse, and it seems to be working. She also seems much keener to eat, in fact she is eating me out of house and home, unlike when she first arrived."

Ross Neder, SHP, Arizona, just started his herd on oats: "Well, here are a few observations from the ultimate sceptic. After a week and still not up to full ration, my horses are eating less free-fed grass and moving more on their own.

"The most amazing occurrence is that one of my long-term rehabs actually played with the lead mare. This guy almost always stands off by himself; he's the lowest of low in the pecking order. If any of the other horses get active, he's 'outta there'. He was even mixing with the herd while grazing.

"Either my trimming has improved this week or oats are the effective agent."

Finally, my own testimonial: after hearing such positive information about whole oats back in November, I put my own horses on oats. My foundered mare, 14'3, 900 lbs, receives about 3 lbs per day, and she has filled out a bit, to a better weight than previously. My young horse is 16'2, 1500 lbs, and worked 1-2 hours daily. I gradually increased her quantity until she is now eating 6 lbs. per day (split into two meals of 3 lb. each). She has never been hot or hyper from the oats in any way (and she's just turning 5). She is a stocky horse, and initially I was worried the oats would increase her weight, but that hasn't happened at all, rather, like many others have observed, she seems to have streamlined and built muscle.

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