

Omega – Not Just a Letter in the Greek Alphabet

Omega 3 fatty acids might offer health benefits for horses.

By Lori Warren, Ph.D.

Adding fat to the horse's diet has become increasingly popular in recent years. Whether it's top-dressing corn oil, switching to a fat-added grain mix, or the convenience of "dry" fat in blended fat supplements, the diets of many horses are being affected by the fat-feeding craze.

While the benefits of high fat diets for horses have been studied and realized, researchers and owners are now asking if one type of fat will offer greResearchers think omega-3 fatty acids could help your horse's overall health. Flax and fish oils are excellent sources of omega-3 fatty acids.ater health advantages over others.

Historically, the source of fat added to horse feeds has been from oils of vegetable origin, which contain high levels of unsaturated fatty acids. Although healthier than saturated fats, not all unsaturated fatty acids are the same. Some have greater potential to enhance, and others to harm, various biological processes in the body.

Similar to humans, horses do require certain fatty acids in their diet. These essential fatty acids include linoleic acid, belonging to the omega-6 family, and linolenic acid, which is the parent of the omega-3 fatty acids. The horse does not have the ability to synthesize these fatty acids in the body, and therefore relies on what is supplied in the diet.

Once in the body, essential fatty acids are transformed into potent regulators of vital body processes, including blood clotting, inflammation and the immune system. In general, omega-6 fatty acids tend to stimulate blood clotting and inflammation, whereas omega-3 fatty acids tend to suppress these responses. Although these fatty acids have seemingly opposing actions, the ratio between omega-3 and omega-6 fatty acids will modulate the final response.

One concern with fat supplementation is that we may be skewing the natural balance of omega-3 and omega-6 fatty acids the horse's body is used to receiving. Hay and pasture forages are low in total fat content (~2%), but most of this fat is made up of omega-3 fatty acids. Cereal grains, such as oats or corn, are also naturally low in fat (~3%), but provide primarily omega-6 fatty acids. Corn oil, soy oil and rice bran are the most common fat sources added to horse feeds. Not only are these sources high in total fat content (25 – 99%), they are also providing most

of this fat in the form of omega-6 fatty acids. Ultimately, a high-fat diet derived from these omega-6-rich sources may change the proportion omega-3 to omega-6 fatty acids, which could have adverse biological consequences.

The equine nutrition program at the University of Florida is hoping to shed light on the role omega-3 fatty acids play in the health of horses. Research in the following areas is currently underway to determine:

- How omega-3 fatty acid supplementation might be used to boost the immune system of mature and growing horses
- If the anti-inflammatory properties of omega-3 fatty acids may affect endometritis in broodmares
- If omega-3 fatty acids from different sources, including flax and fish oil, will produce a different response
- The effect of season on the omega-3 fatty acid content of Florida horse pastures

While the health benefits of omega-3 fatty acid supplementation have been studied extensively in humans, there is still much work to be done in horses before reasonable recommendations can be given.

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