

I've been looking into feeding flaxseed to our horses for the omega-3 benefits it provides. Are there any nutritional differences between flaxseed and flaxseed oil?

Flax plants are grown for both their seeds and their fibers. Horsemen are most interested in flaxseed and its oil derivative, as these products provide nutritional benefits to horses. Both flaxseed and flaxseed oil are rich sources of the essential fatty acid alpha-linolenic acid, which is converted in the body to the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

Whole flaxseed is rarely fed to horses these days as the small, hard seeds cannot be chewed sufficiently to break the seed coat and allow for maximal nutrient extraction. When left whole, flaxseeds are chemically stable. Once they are processed, usually by grinding, they become much less stable and must be fed within a few days unless refrigerated. Flaxseed oil is an easier and more popular way to provide the benefits horsemen seek in omega-3 supplementation: increased immune response, maintenance of healthy membranes, and decreased inflammation, to name a few.

For many years, the conversion of ALA to EPA and DHA has been thought to be efficient. Now, however, a summary of omega-3 research by the International Society for the Study of Fatty Acids and Lipids (ISSFAL) has questioned the ability of ALA to be changed in the body.

According to the summary, "conversion of ALA to EPA is very low, and to DHA is even less—essentially negligible. These very low conversion rates mean that ALA cannot meet the body's need for DHA."

Tom Brenna, professor of nutritional sciences at Cornell University and chairman of the ISSFAL committee that assembled the summary, said, "Each type of omega-3 has distinct functional properties. Seafood/algal omega-3s, also known as long-chain omega-3s, are more potent than terrestrial plant sources of omega-3s and boast certain functions that terrestrial plant-based omega-3s simply cannot perform."

The summary reported that DHA levels in the body were raised most markedly by consuming "preformed" DHA, such as that found in marine-derived oils.

Though the aforementioned summary included studies involving primarily humans, what impact does this research have on supplementation of omega-3 fatty acids to horses? Foremost, horsemen might look elsewhere for an effective omega-3 supplement. One alternative is oil derived from certain cold-water fish. Fish oil is a direct source of EPA and DHA, so the question of whether or not ALA can efficiently be converted to EPA and DHA becomes obsolete.

Raw fish oils are typically not palatable to horses. Recent advances in deodorization and flavoring technology have made fish oils more palatable. In two-choice preference trials with Thoroughbreds, horses showed no significant preference for either fish oil or soybean oil after four days of side-by-side supplementation. Similar rates of grain intake were noted.

If you would like to submit a nutrition question, please contact Eileen Phethean at ephethean@ker.com or mail to: EQUESTRIAN Nutrition Questions, c/o Kentucky Equine Research, 3910 Delaney Ferry Road, Versailles, KY 40383.