# VITAMIN A and HORSES

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**Many individuals take a multiple vitamin daily. Some people even take individual vitamins such as vitamin A.**

**So, vitamin A should be well-known by most horse owners. Do you know that your horse may need a source of vitamin A now?**

**Vitamin A is important in vision, reproduction, digestion and respiration. The epithelium cells which line the reproductive, digestive and respiratory tracts require vitamin A to be normal and healthy. Vitamin A also is important in bone remodeling in young, growing horses.**

**Vitamin A as such is not found in nature. It occurs as carotenes, which are commonly called provitamin A. The carotenes are converted to vitamin A in the lining of the small intestine of horses. Horses are not as efficient in converting carotenes to vitamin A as are some other animals. This is the reason that the blood plasma of horses is rather yellow.**

**Carotene is in high concentration in green forages and is also found in yellow corn. Since light and heat destroy carotenes, sun cured hays are lower in carotenes than fresh, green forages. Hays cut at late stages of maturity, rained on and/or with extended field curing are of poorer quality and have less carotenes than good or high-quality hays. High-quality hays, such as alfalfa, can contain rather large amounts of carotenes. Carotenes from alfalfa hay is more available than that from grass hays.**

**It has been shown that in winter the horse's blood levels of carotene and vitamin A decline. Another decline is often observed in mid to late summer. These lower plasma values are correlated to forage intake. In winter, horses are fed hays which have a lower carotene level than spring pasture forages. In mid to late summer, pasture forages are less productive. The fact that blood levels of carotene and vitamin A increase in spring and in fall reflect the value of green pasture forages as a source of carotenes.**

**Some of the problems noted in a vitamin A deficiency are night blindness, tearing, poor skin, poor growth, impaired reproduction, respiratory infections, rough hair coats and declining plasma, liver and kidney vitamin A levels.**

**Feeding excessive vitamin A also can cause problems. Unthriftiness was noted in ponies fed excessive vitamin A for 15 weeks. Following the unthriftiness, the ponies had rough hair coats, poor muscle tone and were depressed. After 20 weeks, large areas of hair were lost. The ponies were periodically in-coordinated, severely depressed and laid down most of the time.**

**The toxic level of vitamin A is 454 IU (International Units) per pound of body weight. So 544,800 IU of vitamin A would be toxic for a 1,200 pound horse which is more than 10 times the recommended level.**

**Recently data from Virginia Polytechnic Institute noted that broodmares with access to pasture during the winter had a depletion in their vitamin A levels. If the broodmares were fed two-year-old hay and a grain mix without any vitamin A in dry lots, they became marginally vitamin A deficient within two months.**

**These same researchers showed that the serum vitamin A levels of weanlings were lower than for their dams on the same feeding programs. These weanlings were kept on**

**pasture and fed hay or hay and concentrates. They concluded that weanlings should be supplemented with vitamin A regardless of diet.**

**Where low-quality hay was fed this winter, vitamin A status of horses could be marginal at best if they were not fed a grain mix that was fortified with sufficient vitamin A. This could especially be a problem for broodmares that will foal and be re-bred this spring or open mares designated to be bred this spring as well as young, growing horses that turned a yearling this winter. Since hay quality was lower than normally recommended to be fed to horses in some areas, broodmare and yearling owners which had these conditions this winter needs to consider feeding a supplemental vitamin A source this spring.**

**Spring forages are a good source of carotenes; however, in animals with a low level of vitamin A, it will take longer to replenish their body vitamin A stores. This delay could be occurring when mares are getting ready to foal, produce colostrum and/or being bred.**

**Yearlings normally have a growth spurt associated with lush spring pastures. Their growth could be less or delayed until vitamin A levels are restored from spring grass.**

**Vitamin A can be supplies by fortified grain mixes, alfalfa hay or a vitamin supplement. It is advisable to select a vitamin supplement that has 10 parts of vitamin A to 1 part vitamin D. For individuals who have their feed mixed or mix their feed on the farm, they can add a vitamin A pre-mix to these grain mixes.**

**Pregnant broodmares that weigh 1,200 pounds in their last trimester or early lactation need about 50,000 IU per day. Feeding a slightly larger amount of vitamin A would aid in replenishing vitamin A stores.**

**Yearlings weighing about 775 pounds need 24,400 IU of vitamin A daily.**

**Broodmares and/or yearlings on good quality spring pasture probably only need a vitamin A supplement for one to two months.**

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