



## **NUTRITION'S IMPACT ON A HEALTHY HAIR COAT**

*What can be more magnificent than seeing your horse's coat sparkle under the light of the sun or the glow of a competition ring? Without a doubt, a luxurious coat reflects your horse's good health and the benefits of your devoted care. Palomino, black, isabelline, bay or chestnut: whatever the coat, whatever the colour, horsehair should always be full and shiny.*

A horse's coat and hair are made up of epithelial tissue. Among its many functions, this tissue regulates body temperature and functions as a protective barrier between the horse and its environment. It also serves to make the horse more attractive. Various types of hair cover the horse's skin. Most of the coat consists of temporary hair while tactile hair grows on the horse's snout, ears and eyes. You can find permanent hair on the horse's mane, tail and eyelashes. A horse's coat, hair and hooves are largely composed of keratin. Keratin is a fibrous protein material produced by epidermal cells. While many different factors such as genetics and the environment may influence the appearance of a horse's coat, the keratinization process is significantly affected by poor nutrition.

### **THE ROLE OF NUTRIENTS**

Several key elements in your horse's diet are likely to affect the quality and fullness of its coat. A dull, dry, broken or sparse coat may reflect a deficiency or excess of protein, phosphorus, iodine, zinc, copper, cobalt, or vitamins A, B, C, or E.

It is important to remember that proteins are composed of chains of amino acids. Among these, "essential" amino acids refer to the ten types of amino acids which the body is unable to produce and must therefore obtain through food. A feed's overall protein quality will depend upon a high-quality amino acid profile. Horsehair is also known to contain sulphur, a derivative of amino acids. Although both organic and inorganic forms of sulphur exist, non-ruminants like horses are only able to fulfill their needs by consuming organic sulphur. This can be found in a variety of amino acids including methionine, cysteine and cystine.

Fats, and especially essential fatty acids are necessary to produce sebum, a secretion that protects and lubricates the hair. Additionally, fats allow for the improved absorption of fat soluble vitamins such as vitamin A. A horse is able to store vitamin A in its liver for up to six months. Beyond this, a deficiency may result in a dry and dull coat.

Biotin, or vitamin B8, remains essential for the formation and integrity of keratinized tissues including a horse's skin, hair and hooves. With the help of good bacteria, a certain level of biotin production is able to take place in a horse's large intestine. Horses who have undergone stress or antibiotic treatments are more likely to require supplementation. Any sort of destabilization of the intestinal flora affects the microorganisms responsible for producing vitamin B8 in the large intestine.

Zinc contributes to the health and strength of a horse's hair and coat. The form of zinc served to horses is also important. Organic zinc that is bound to amino acids will prove to be effective. On the other hand, inorganic zinc will not accomplish anything. Research conducted on hair demonstrates that over a period of 110 days, organic mineral supplements produce a visible difference in the hair's appearance, structure and composition. In conjunction with vitamin C and zinc, copper plays a role in skin and hair repair and pigmentation. Maintaining the ratio of these three nutrients is even more important than each nutrient individually. For example, in

adult horses, the optimal zinc to copper ratio should be 3-4:1, meaning three to four portions of copper for each portion of zinc. Furthermore, when served at toxic levels, selenium can cause progressive hair loss around the tail, mane and fetlock joints. However, since Quebec soils contain almost no selenium, it is extremely rare to see any cases of toxicity.

As a final note, fulfilling your horse's nutritional needs will require you to consider both quantity and quality. At the same time, you must take into account your horse's age, activity level and physical health. A balanced diet should be comprised of the correct proportions of fibre, starches, fats (including essential fatty acids), protein, vitamins and minerals.

A little boost for extra shine!

To add more shine to your horse's coat, try adding essential fatty acids to your horse's ration. You can start with linolenic acid, better known as a source of omega-3s.



Look for feeds with the following icon:

## Bibliography

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