

Vitamins and Their Relation to Horse Feeding

Condensed by E. P. Taylor, Class of 1940, from that article by Frank Hare, D.V.M., in The Sunday Lexington Herald-Leader, Sunday, Jan. 7, 1940.

THE NEED of vitamins for animals and their importance to proper growth and health has been so thoroughly propagandized that we are beginning to feel justified in feeding fish to cattle and parsnips to dogs. Our herbivorous animals are being fed meat and carnivorous animals vegetables to supply their vitamin requirements.

Our increasing knowledge of vitamins and their importance must not lead us to minimize the importance of bacteria and parasites as well as properly balanced diets. Neither must we become so thoroughly vitaminized as to forget the importance of the endocrine glands which have a direct regulatory effect. Vitamins and other food elements that are taken into the digestive tract are not properly digested because of structural damage done to the digestive system by parasites.

In other words, foods taken into the stomach and intestines do not become part of the body until they are broken up, absorbed and deposited within the tissues.

Vitamin A

Vitamin A is called the anti-ophthalmia vitamin, an absence of which produces a condition in animals known as xerophthalmia.

Though it has not been definitely proved, good clinical observers feel that an absence of this vitamin has a strong influence on the susceptibility of horses to moon blindness. It is important in preventing infections of nose, throat, and bronchi; it is useful in preventing shipping fever, coughs, and colds in young horses, or lessening the severity of such infections. A properly nourished indi-

vidual has a higher resistance against all bacterial infections.

Vitamin A is formed in the animal by a pigment called carotene, taken from plants. It occurs in concentrated form in halibut oil and cod liver oil. Well cured alfalfa and clover hay contain an abundance of this vitamin; also yellow corn, milk, carrots, and green forage.

Vitamin B

Vitamin B or Thiamin is known as the anti-beri-beri vitamin. Its value in horse feeding has not been clearly demonstrated. However wheat bran, rice bran, well cured hays, and green forage all contain an abundance of this vitamin and they constitute an important part of the horse diet. Because this vitamin is found so extensively in the diet of horses one need not fear a deficiency of it, providing nothing interferes with its absorption.

Vitamin C

Vitamin C or ascorbic acid is found in fresh green forage and germinated seeds. Its value in horse feeding has not been determined.

Vitamin D

Vitamin D is probably the most important vitamin in horse feeding. It is recommended as a specific in the treatment or prevention of rickets in young animals and osteomalacia or "big head" in older animals. These diseases are caused by faulty deposits of minerals in the bones.

It must be remembered that vitamin D is valueless unless the diet also contains the right minerals in the correct proportions. The intestines must not be damaged to the extent that absorption

is hindered or rickets may develop in an animal even in the presence of vitamin D and minerals.

The appearance of splints, ringbones, and other diseases of the skeleton of foals, weanlings, and yearlings that have not been subject to the rigors of training are due to faulty calcium metabolism, beginning usually before the foal was born and continuing through the period of growth and development.

If the young horse does not show pronounced signs of faulty mineral metabolism such as splints and ringbones, the attachments of muscles, ligaments and tendons to the bone are so insecure that just as soon as the horse is put into training or is allowed to run in the pasture he goes wrong.

It has been noted that on farms where a program of parasite control and treatment has been in effect, and where brood mares and growing stock have received properly cured legume hay and an abundance of sunshine these diseases do not occur. In this connection remember that living plants or fresh green pastures are generally considered to be entirely free of this vitamin. Natural foods that contain vitamin D are of animal origin. Only hay cured in the sun contains vitamin D. Exposure to the direct sunlight is the principal source of this vitamin.

Vitamin E

Vitamin E is called the anti-sterility vitamin. There is some evidence that cattle and horses might suffer from a lack of this vitamin. It is found in concentrated form in cottonseed oil and wheat germ oil, bran, linseed meal, and green forage.

The importance of nutrition in prevention of diseases in animals must not be overemphasized, for highly destructive bacteria may invade the body and produce disease despite the care and attention it may have received. Likewise parasites may invade the body and destroy an animal that has received the best of care and attention so far as feeding is concerned.

A proper combination of the following constitutes the ideal ration for horses:

yellow corn
oats
wheat bran
linseed oil meal
properly cured alfalfa
clover
heavy clover and timothy mixed
lespedeza
bluegrass pasture

This diet, together with plenty of sunshine and systematic parasite control, will go far in the development of the perfect horse.

RANCH—

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the Santa Gertrudis, the Africander breed is larger and easier to handle.

Spay Heifers

The King ranch is one of the few ranches that practice spaying their heifers. About half of the heifers, the best ones of course, are selected for breeding purposes. The balance are spayed when about one year old, thereby eliminating poor offspring and overproduction of calves. The spayed heifers also grow fat more rapidly. The ranch veterinarian spays the heifers in the Argentine corral—a prize exhibit. From a raised platform and with the aid of a score of levers its operator can castrate, spay, dehorn, doctor, and brand the animals that pass below him so fast they do not know what has happened to them.

Cattle pens are elaborate mazes of wooden fencing surrounding the Argentine corral. Into one end is driven a thousand head of cattle pressed through like sausage meat going into a grinder. And, like sausage meat coming out, ribbons of them flutter into the fanning pens. They are sorted by swing gates, dexterously operated from above—steers in this pen, spayed heifers in that, old cows in another, young bulls in a fourth. Or they may all go plunging down through the dipping vat. Or each bull may pause,