Pantothenic acid

Pantothenic acid is a component of coenzyme A, which is involved in Kreb’s cycle. This, in turn, is involved in the oxidation of fatty acids, the oxidation of keto acids that result from the deamination of amino acids, the acetylation of choline and many other important reactions in the bird’s body.

Clinical signs

The clinical signs of pantothenic acid deficiency are hard to differentiate from those of biotin deficiency and include dermatosis, ruffled and broken feathers, chondrodystrophy, poor growth and deaths. Chicks often also have crusty, scab-like lesions in the corner of their mouths. The eyelid margins look granular, with small scabs on them, and they are often stuck together. In some cases skin is lost on the feet and, in others, the skin cornifies and what look like small warts (but are not) appear.

Post mortem findings

There is often a paste like material in the mouth and a light grey exudate in the proventriculus. The liver is enlarged and may be abnormally yellow in colour. The spleen is atrophied and the kidneys are enlarged. Histopathologically there is a loss of myelin of the spinal nerves and fibres of the spinal cord.

Embryos from pantothenic deficient mothers have high mortality and show haemorrhages and severe oedema.

Treatment

If it is not too far advanced, pantothenic acid deficiency can be fully reversed by replacement therapy. This starts via the water and can be continued via the feed.