Panbonis – Herbal Vitamin D_3® for Bone Health and Eggshell quality.

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Herbonis
Synonym for healthy bones

Vitamin D is a key factor in many vital functions of man and animals. Best known activity is in regulation of calcium and phosphorus homeostasis.

A modern breed of broiler chickens grows in only 35 day to a market size of more than 2 kg and a laying hen today produces more than 310 eggs in a year. For such high productivity nutrition and housing must meet high standards. Any deviation will result in commercial losses. Nutrition was and will be a critical factor among stocking density, temperature and hygienic conditions.
To prevent leg problems in very fast growing breeds of broiler chickens under commercial conditions, very high supplementation with vitamin D_3, often at or above legal limits of 5'000 IU/kg, is used. Vitamin D as such is biologically not active, after uptake, or production in skin, it needs two transformations: first in liver to the storage form 25-hydroxycholecalciferol and second in kidney to the active form 1.25-dihydroxycholecalciferol. From experiments of Edwards[i] and Rennie[ii] it is known that direct applied 1.25-dihydroxycholecalcierol is the most active prevention of leg weaknesses such as tibial dyschondroplasia. However, this metabolite is not commercially available due to high costs of synthesis.

A recent publication[iii] describes a new product containing the active form of Vitamin D_3 for Animal Nutrition which is available as Panbonis®. It is entirely of natural origin and contains the already active form of vitamin D_3 in a protected form. This makes the active vitamin D_3 water-soluble and more stable than the regular vitamin D_3.

As main benefits of Panbonis it has been demonstrated in

- broiler starters: Strong skeletal as start
- heavy broilers: less leg weaknesses
- laying hens: better eggshell stability and lesser cracks
- broiler breeders: more usable eggs
- lactating sows: higher piglet survival and less leg problems

Literature:

[1] EDWARDS JNR, H.M. (1990) Efficacy trials of several Vitamin D compounds in the prevention of tibial dyschondroplasia in broiler chickens. Journal of Nutrition, 120: 1054–1061.
[1] RENNIE, J.S., WHITEHEAD, C.C. & THORP, B.H. (1993) The effect of dietary 1,25-dihydroxycholecalciferol in preventing tibial dyschondroplasia in broilers fed on diets imbalanced in calcium and phosphorus. British Journal of Nutrition, 69:809–816.
[1] Bachmann H, Autzen S, Frey U, Wehr U, Rambeck W, McCormack H, Whitehead CC., The efficacy of a standardised product from dried leaves of Solanum glaucophyllum as source of 1,25-dihydroxycholecalciferol for poultry. Br Poult Sci. 2013 Jul 16. [Epub ahead of print]

[i] EDWARDS JNR, H.M. (1990) Efficacy trials of several Vitamin D compounds in the prevention of tibial dyschondroplasia in broiler chickens. Journal of Nutrition, 120: 1054–1061.

[ii] RENNIE, J.S., WHITEHEAD, C.C. & THORP, B.H. (1993) The effect of dietary 1,25-dihydroxycholecalciferol in preventing tibial dyschondroplasia in broilers fed on diets imbalanced in calcium and phosphorus. British Journal of Nutrition, 69:809–816.

[iii] Bachmann H, Autzen S, Frey U, Wehr U, Rambeck W, McCormack H, Whitehead CC., The efficacy of a standardised product from dried leaves of Solanum glaucophyllum as source of 1,25-dihydroxycholecalciferol for poultry. Br Poult Sci. 2013 Jul 16. [Epub ahead of print]