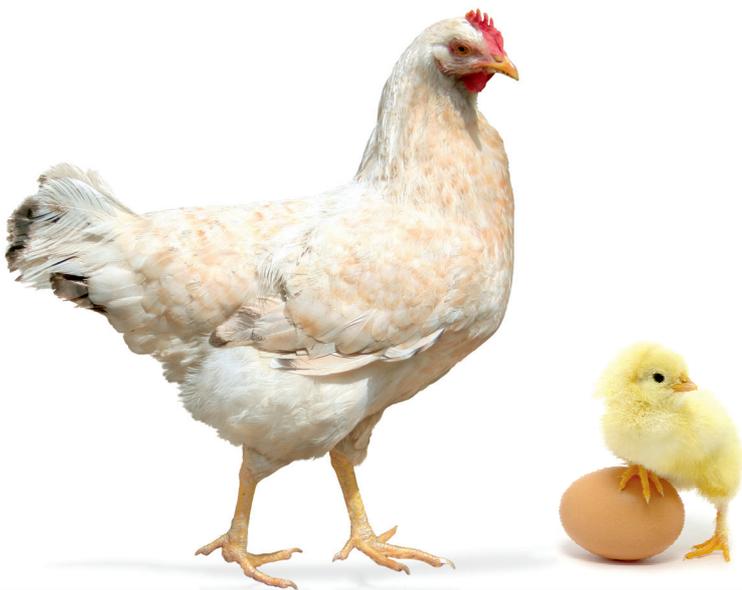




Herbonis

# Panbonis<sup>®</sup>

The natural source of the most active vitamin D<sub>3</sub> form 1,25-Dihydroxyvitamin D<sub>3</sub>



Key factor in calcium and phosphorus metabolism

The most active vitamin D<sub>3</sub> form on the market

100% natural and readily available to the body

Faster effect, stronger bones, better performance

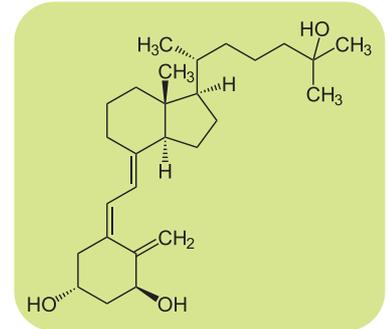
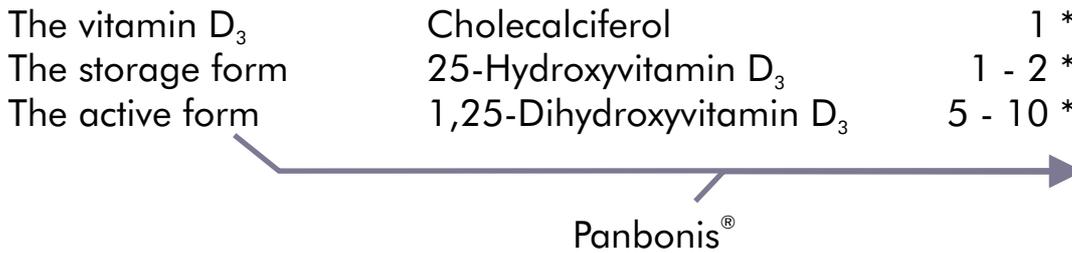
Herbonis – Synonym for healthy bones

# Key factor in calcium and phosphorus metabolism

In today's global markets, poultry and meat producers need to maximize their profits by optimizing the high quality standards in production, maximize efficiency, minimizing waste and losses is the daily business. Here, vitamin D<sub>3</sub> plays an essential role in uptake of calcium and phosphorus which have an essential effect on bone minerals. Bone problems occur frequently in fast growing broilers. Panbonis® is the answer!

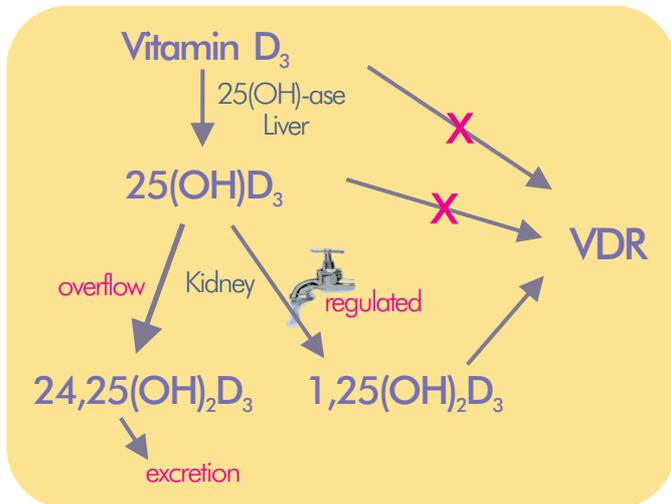
## The most active vitamin D<sub>3</sub> form on the market

3 forms of vitamin D<sub>3</sub> are presently available in animal nutrition:



(\* relative activity in bioassays)

## 100% natural and readily available to the body

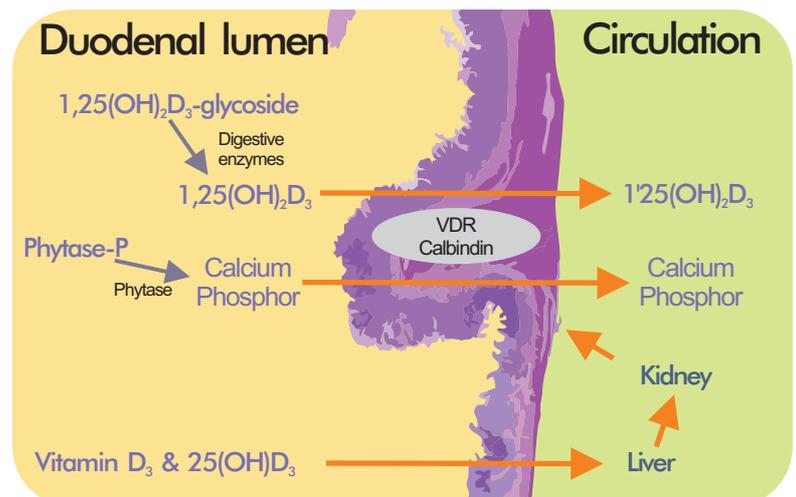


Panbonis® is a standardized and formulated product from plant *Solanum glaucophyllum* and contains the natural active form of vitamin D<sub>3</sub> in glycosidic bound form.

effect

- 🌿 Calcium uptake in gut
- 🌿 Phosphorus uptake in gut
- 🌿 Ca/P deposition in bone
- 🌿 Ca/P mobilization in bone
- 🌿 Positive in muscle function
- 🌿 Positive in immune system

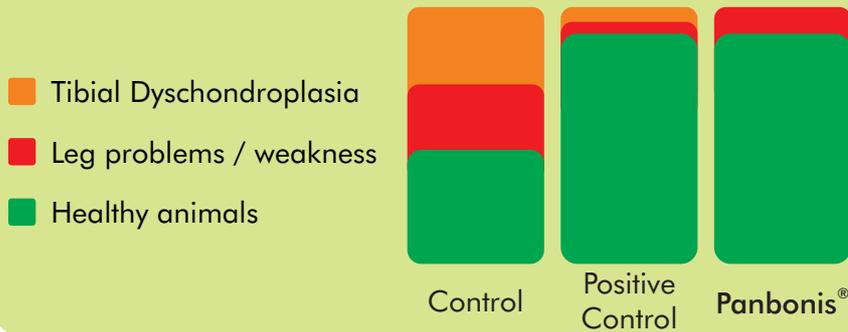
It is directly active intestine at uptake and is also the most potent form in preventing leg weaknesses. Panbonis® improves phosphorus utilization.



VDR = Vitamin D receptor  
(Sources: Bachmann 2013 & Edwards 1989 / Edwards 1993)

# Key factor in calcium and phosphorus metabolism

Experiment prevention of leg weakness in a model for Tibial Dyschondroplasia

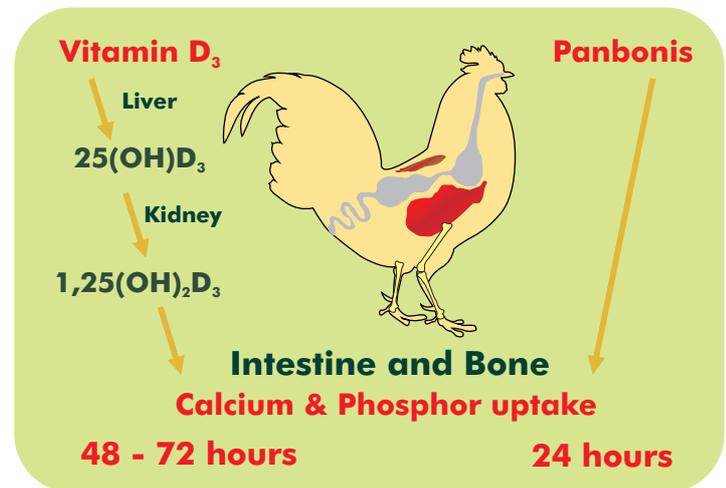


The unique product form of Panbonis® acts faster than vitamin D<sub>3</sub> and is the directly biologically active form of vitamin D<sub>3</sub> for rapid onset without overloading liver and kidney.

(Source: Bachmann 2013)

## Faster effect, stronger bones, better performance

- Glycosidic bound form allows a high stability and solubility
- For fast absorption in the small intestine for better availability
- Directly biologically active form of vitamin D<sub>3</sub> for rapid onset without overloading liver and kidney



## An entire herbal and safe product

	Vitamin D <sub>3</sub> (synthetic)	25(OH)D <sub>3</sub> (synthetic)	Panbonis® (natural)
Leg Weakness <sup>1)</sup>	-	-	yes
Tissue Accumulation <sup>2)</sup>	high	medium	low
Half Life <sup>3)</sup>	2 month	2 weeks	16 hours
Stability <sup>4)</sup>	medium	medium	high
Safety Tolerance <sup>5)</sup>	20 - 50x	5 - 10x	20 - 40x

1) Active in a model for tibial dyschondroplasia. (Source: Elliot 1995) 2) Potential for accumulation in fat tissue. 3) Time until half of compound is eliminated. (Source: Jones 2009) 4) Thermal stability during storage and processing. 5) Tolerance: the factor at which toxicity starts, based on recommended dose.

# Panbonis® product and dose recommendation

Panbonis® is available in two concentrations. Panbonis® 10 and 20 ppm. It should be used on top of usual supplementation with vitamin D<sub>3</sub> from other sources. Dosage may vary according to local conditions.

## Panbonis® 10

For most species:  
50 to 200 g Panbonis® 10 per ton of feed

In particular:

starter phase:	100 g/t
grower / finisher:	50 g/t
heavy (to day 49):	100 g/t
breeder	100 g/t

## Panbonis® 20

For most species:  
25 to 100 g Panbonis® 20 per ton of feed

In particular:

starter phase:	50 g/t
grower / finisher:	25 g/t
heavy (to day 49):	50 g/t
breeder	50 g/t

## Further information and your contact

Literature:	
Bachmann 2013	Bachmann H, Autzen S, Frey U, Wehr U, Rambeck W, McCormack H, Whitehead CC., <i>BR Poult. Sci.</i> 2013;54(5):642-52, The efficacy of a standardised product from dried leaves of <i>Solanum glaucophyllum</i> as source of 1,25-dihydroxycholecalciferol for poultry.
Jones 2008	Jones G., <i>Am. J. Clin. Nutr.</i> 2008;88(2):582S-586S, Pharmacokinetics of vitamin D toxicity.
Elliot 1995	Elliot MA, Roberson KD, Rowland GN 3rd, Edwards HM Jr., <i>Poult Sci.</i> 1995;74(9):1495-505, Effects of dietary calcium and 1,25-dihydroxycholecalciferol on the development of tibial dyschondroplasia in broilers during the starter and grower periods.
Edwards 1993	Edwards HM Jr., <i>Am. J. Clin. Nutr.</i> 1993;123(3):567-77, Dietary 1,25-dihydroxycholecalciferol supplementation increases natural phytate phosphorus utilization in chickens.
Edwards 1989	Edwards HM Jr., <i>Am. J. Clin. Nutr.</i> 1989;119(4):647-52, The effect of dietary cholecalciferol, 25-hydroxycholecalciferol and 1,25-dihydroxycholecalciferol on the development of tibial dyschondroplasia in broiler chickens in the absence and presence of disulfiram.

**„Herbonis endeavors to make a significant contribution to animal health with biologically active natural compounds“**

For further information about other products, please visit our website [www.herbonis.com](http://www.herbonis.com).



[www.herbonis.com](http://www.herbonis.com)

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