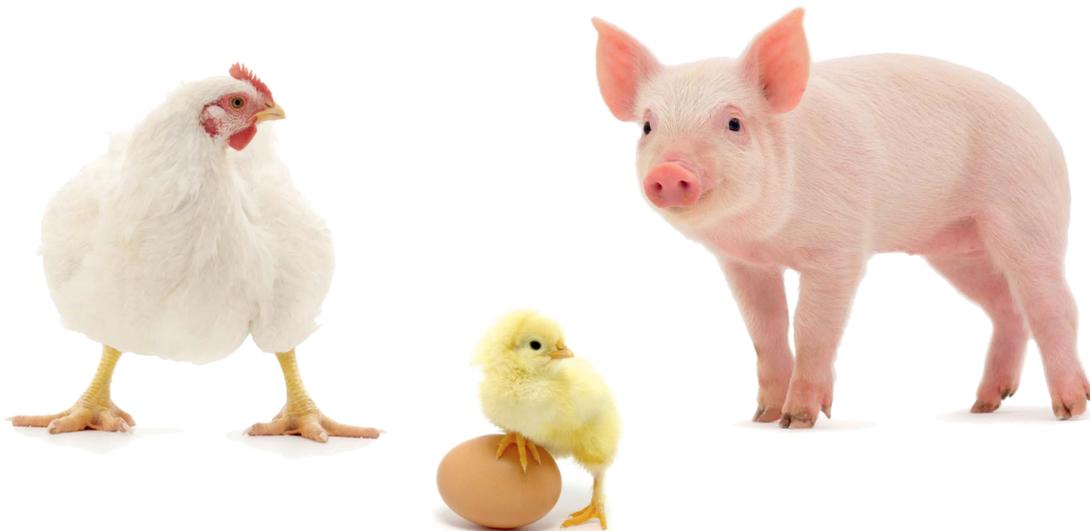




Herbonis

Panbonis[®]

The unique natural source
of the bioactive form of vitamin D



Supports the essential functions of vitamin D

Improves calcium and phosphorus utilisation in feed

100% natural and high bioavailability

High processing and storage stability

An economical and safe complementary feed

Herbonis – Synonym for healthy bones

Supports the essential function of vitamin D

In today's market environment, meat producers need to improve performance to stay competitive. To reach that goal, optimal quality standards in production, maximal efficiency and minimizing losses are of greatest importance. Fast growing animals frequently experience bone and health problems that could lead to reduced performance. Calcium and phosphorus metabolism is frequently associated with those phenomena. Vitamin D₃ plays an essential role in the metabolism of the two minerals and, in particular, in the mineralization of bones.

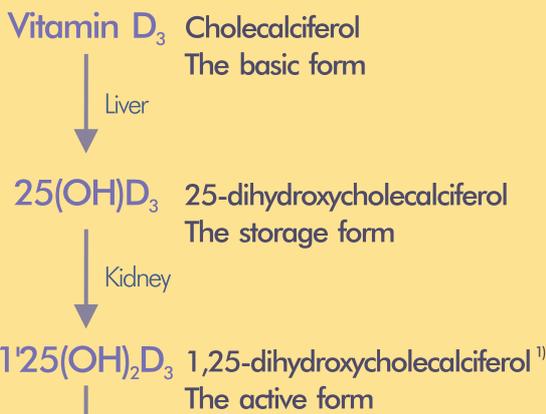
Panbonis[®] boosts the action of vitamin D and supports its functions.

Vitamin D in feed is important for:

-  Bone strength and health
-  Muscle function and cell signaling
-  Immune functions

Ref.: Edwards 1993,1989 / Prietl 2013

The metabolic activation of vitamin D



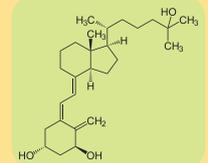
-  Calcium uptake in gut
-  Phosphorus uptake in gut
-  Ca/P deposition in bone
-  Ca/P mobilization in bone
-  On muscle functions
-  On the immune system

Ref.: EFSA 2010 & VitaminD 2011

How Panbonis[®] works

Panbonis[®] 1,25-dihydroxycholecalciferol-glycosides
The natural form

Digestion



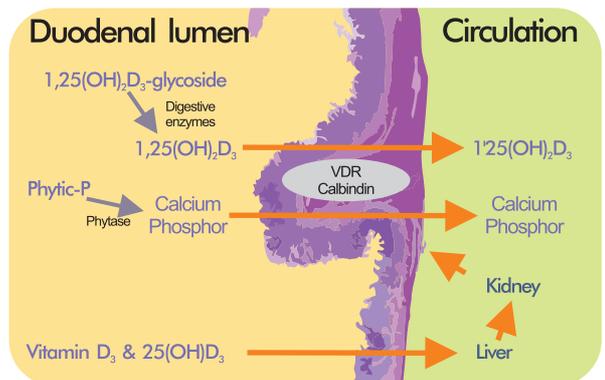
1,25(OH)₂D₃ 1,25-dihydroxycholecalciferol¹⁾
The active form

Ref.: Bachmann 2013 & Edwards 1989 / Edwards 1993
1) currently not available for animal nutrition.

This is where Panbonis[®] is a new approach for supporting the action of vitamin D₃

Improves calcium and phosphorus utilisation in feed

Panbonis[®] contains 1,25-dihydroxycholecalciferol-glycosides and delivers the active form in a controlled amount to the intestine, at the very place nutrients are absorbed. Following uptake, Panbonis[®] releases the right amount of the active form during intestinal transit. This supports the intestinal uptake of calcium and phosphorus from feed into the body's circulation.

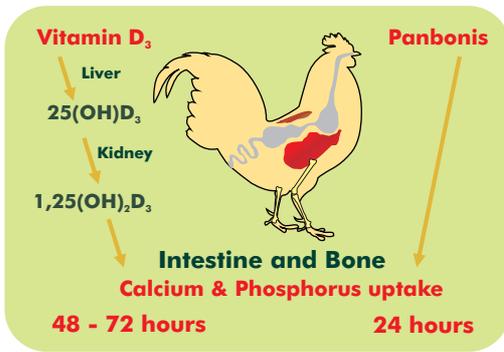


VDR = Vitamin D receptor

-  Increases growth performance and bone mineralization¹⁾
-  Increases eggshell breaking strength²⁾
-  Allows up to 20% reduction of phosphorus addition in feed³⁾

Ref.: 1) Bachmann 2013; 2) Belgium 2014; 3) Herbonis 2016

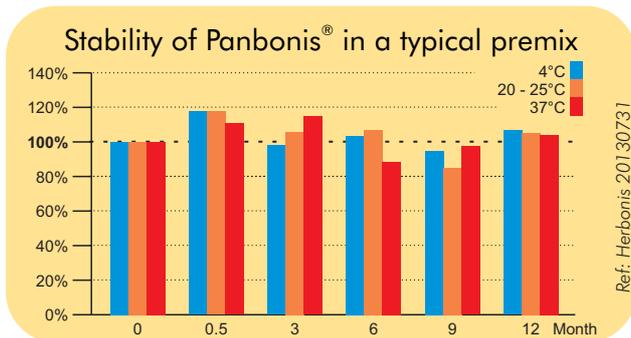
100% natural and readily available



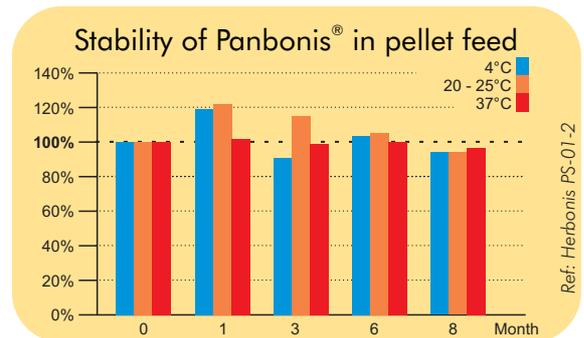
The unique herbal product Panbonis® acts fast. It delivers a dosed amount of glycosides of 1,25-dihydroxycholecalciferol directly the intestinal track without being activated by the liver and kidney. Afterwards, it is rapidly excreted without accumulation in tissue.



High processing and storage stability



Panbonis® diluted with 25 % calcium carbonate stored at 3 different temperatures and analysed. Result: stability is given for at least 12 month.



Panbonis® prepared as a broiler grower feed of wheat corn type with coccidiostat. Pelleting temperature was 75 °C .

Result: stability is given for at least 8 months.

An economical and safe complementary feed

Panbonis® is a formulated, processed and standardized complementary feed containing the plant *Solanum glaucophyllum*, which fulfils the criteria for feed material according to EC 767/2009 regulation and naturally contains 1,25-dihydroxycholecalciferol-glycosides.

Economic advantages with Panbonis® in your feed:



Panbonis®



- supports vitamin D functions
- is a high quality plant material
- is safe for humans, animals and the environment
- allows reduction of phosphorus addition in feed ¹⁾
- increases growth performance and bone mineralization ²⁾
- has a broad tolerance
- increases eggshell breaking strength ³⁾
- has high processing and storage stability ⁴⁾



1) Herbonis 2016; 2) Bachmann 2013; 3) Ref.:Belgium, 2014; 4) Thermal stability for storage / processing up to 120°C;

Panbonis® product and dose recommendation

The product is a complementary feed according to EC 767/2009 regulation and available in two concentrations, Panbonis® 10 ppm and Panbonis® 20 ppm. It should be used on top of recommended vitamin D₃ sources.

Product Profile:

Appearance: green powder
 Bulk density: 0.44 – 0.48 g/cm³
 Particle size: between 0.2 – 1.0 mm
 Stability: high (up to 120 °C)
 Shelf-life: 2 years from production date
 Sales unit: 20 kg bag

Patents Pending - HACCP - GMP⁺
 Made in Switzerland - GMO FREE



Panbonis®

	10 ppm	20 ppm
General dose range:	50 – 200 g/t	25 – 100 g/t
Recommendation for poultry:		
broiler starter	50 – 100 g/t	25 – 50 g/t
grower / finisher	50 – 100 g/t	25 – 50 g/t
heavy broiler	50 – 100 g/t	25 – 50 g/t
breeder	100 g/t	50 g/t
layer	100 g/t	50 g/t
Recommendation for pigs:		
piglets	50 – 100 g/t	25 – 50 g/t
grower / finisher	50 – 100 g/t	25 – 50 g/t
gilts	75 – 100 g/t	40 – 50 g/t
gestating sows	75 – 100 g/t	40 – 50 g/t
lactating sows	75 – 100 g/t	40 – 50 g/t
boars	100 g/t	50 g/t

Recommended dosage in addition to Vitamin D₃ sources.
 Dosage may vary due to local conditions. Please consult your local distributor.

Further information and contact

References:

- Edwards 1993
 Edwards 1989
 Prietl 2013
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 Jones 2008
- Edwards HM Jr., J Nutr. 1993 Mar;123(3):567-77., Dietary 1,25-dihydroxycholecalciferol supplementation increases natural phytate phosphorus utilization in chickens.
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 Barbara Prietl, Gerlies Treiber, Thomas R. Pieber, and Karin Amrein; Nutrients. 2013 Jul; 5(7): 2502–2521. Vitamin D and Immune Function
 Bachmann H, Autzen S, Frey U, Wehr U, Rambeck W, McCormack H, Whitehead CC., Br Poult Sci. 2013;54(5):642-52., The efficacy of a standardised product from dried leaves of Solanum glaucophyllum as source of 1,25-dihydroxycholecalciferol for poultry.
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 A. Molnar, L. Maertens, E. Delezie / Institute for Agriculture and Fisheries Research Melle, Belgium
 Yuwares Ruangpanit - 1, 25-CALCITRIOL-GLYCOSIDE (PANBONIS®) ENHANCES GROWTH PERFORMANCE, BONE MINERALIZATION AND IMMUNE STATUS OF BROILERS FED DIETS CONTAINING LOW AVAILABLE PHOSPHORUS / ESPN 2015, 24-27 August 2015, Prague, Czech Republic, P 062
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„Herbonis endeavors to make a significant contribution to animal welfare with biologically active natural compounds“

NEW

Panbonis® GREEN

For organic feed production in accordance with Regulations (EC) 834/2007 and (EC) 889/2008.



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