VETPHARM

POULSIL

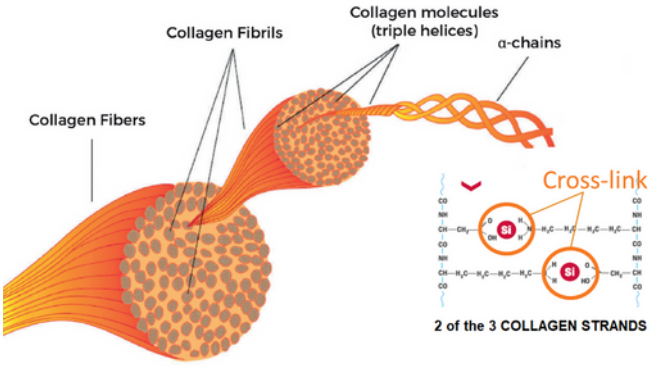
the bio-active silicium

for laying birds

The power of SI

Silicium (Si) is the 2nd most prevalent element on earth, which shows very interesting properties regarding bone health, cartilage, egg quality, and blood vessels.

- Because of its bond with collagen, elastin, keratin, and proteoglycans, Si contributes to the architecture, strength, durability, and elasticity of the connective tissue.
- Elevated intake of Si shows increased cortical bone strength, as well as a positive effect on the structural integrity of eggshells, nails, hairs, and skin, as well as overall collagen synthesis, and bone mineralization.



Different forms of Silicium

Chemical element

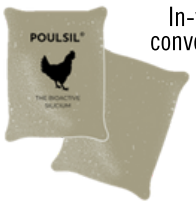
Modified Silicium dioxide (Poulsil)

Formulated to provide highly bio-available silicium

Chemical element

Silicium dioxide
limited bio-availability in the environment
(Beer; Cereals)

In-vivo conversion



Synthetic form

Bioavailable silicium

Si as a vital component of collagen

- Cross-linking with collagen fibrils → Strength and elasticity of connective tissues
- Cross-linking with other proteins → Structural stability of bones and eggshells
- Collagen Synthesis → Stimulation of enzyme prolyl hydroxylase

Si in bone remodelling

- Bone regeneration → Increase bone formation and reduce resorption
- Bone density → At physiological levels, improves Ca incorporation in bones
- Osteoblast activity → Modulate osteoblast anabolic activity and reduce osteoclastic cells activity

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EGG QUALITY PARAMETERS STUDIES

Egg quality trial (Zootests, 2023)

Trial performed on 3 batches of 390 hens, with the below setup:

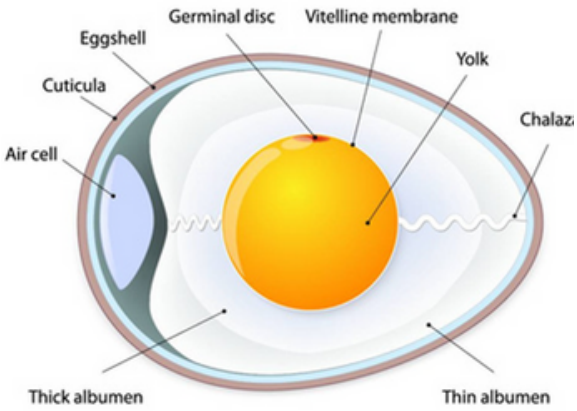
Treatment	Poulsil inclusion levels in feed	No. of replicates	No. of hens per replicate	No. of hens per group
T1	Control	26	15	390
T2	Control + Poulsil (150 g/ton)	26	15	390
T3	Control + Poulsil (450 g/ton)	26	15	390

Experiment was run from 26 to 30 weeks-old, (duration = 28 days).

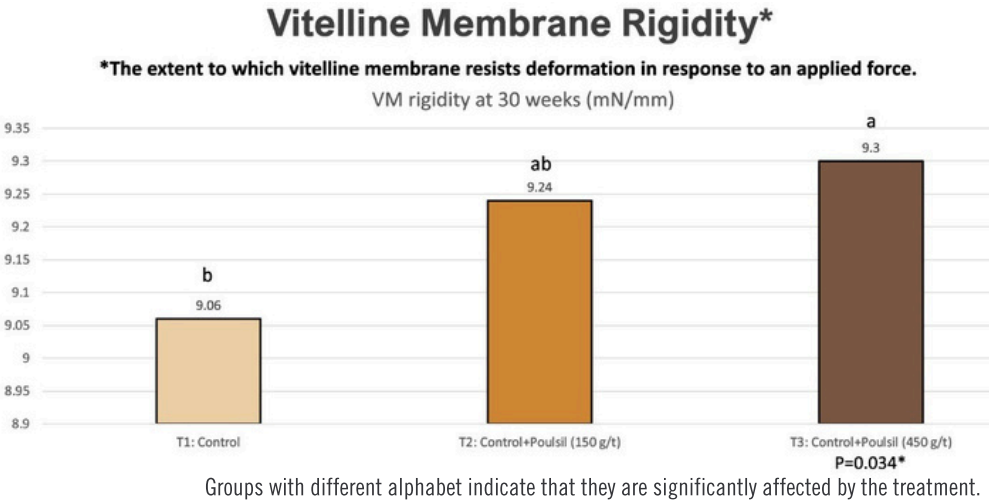
Vitelline Membrane (VM)

- Together with the chalaza, VM keeps the egg yolk in the central part of the egg, thereby preventing its integration with the shell membranes.
- In addition, it acts as a diffusion barrier by transporting water and nutrients between the egg yolk and the egg white.
- It protects the embryo during the first 96 h of incubation against the strongly alkaline nature of the egg white (Mann, 2008).

CHICKEN EGG



Vitelline Membrane Rigidity



Groups with different alphabet indicate that they are significantly affected by the treatment.

Statistically significant improvement in vitelline membrane rigidity indicates a better egg quality from birds after Poulsil ® supplementation.

Advantages of Higher Vitelline Membrane Rigidity

- Embryo Protection: Ensures physical safety and integrity of the developing embryo.
- Albumen Separation: Maintains clear delineation between yolk and egg white.
- Bacterial Barrier: Reduces the risk of bacterial invasions.
- Egg Quality Maintenance: Retains yolk shape indicating freshness and quality.
- Yolk Positioning: Centers yolk for optimal embryonic development and culinary presentation.
- Nutrient Retention: Helps in preventing potential nutrient loss from the yolk.

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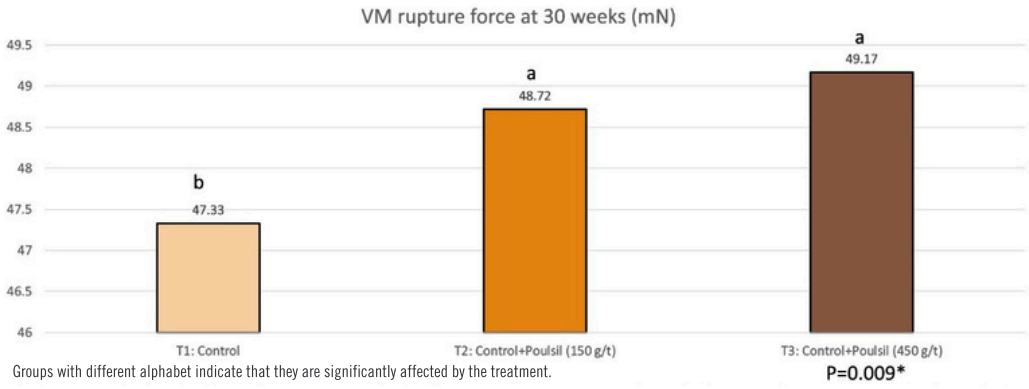
EGG QUALITY PARAMETERS STUDIES

Vitelline Membrane Rupture Force

Statistically significant improvement in vitelline membrane rigidity indicates a better egg quality from birds after Poulsil ® supplementation.

Vitelline Membrane Rupture Force*

*The maximum force applied on the yolk before membrane rupture.

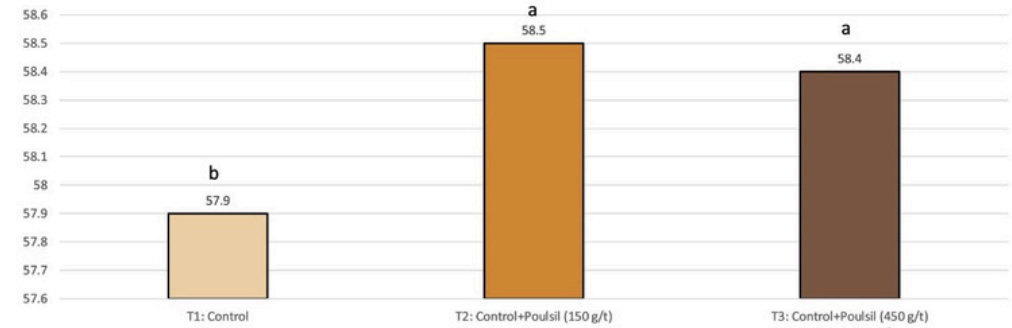


Groups with different alphabet indicate that they are significantly affected by the treatment.

P=0.009*

Average Egg Weight (g)

*The average of the egg weight from 27 – 30 weeks.



Groups with different alphabet indicate that they are significantly affected by the treatment.

P=0.004*

Average Egg Weight

Higher the egg weight, better is the quality of egg.

Poulsil ® significantly improved the egg weight.

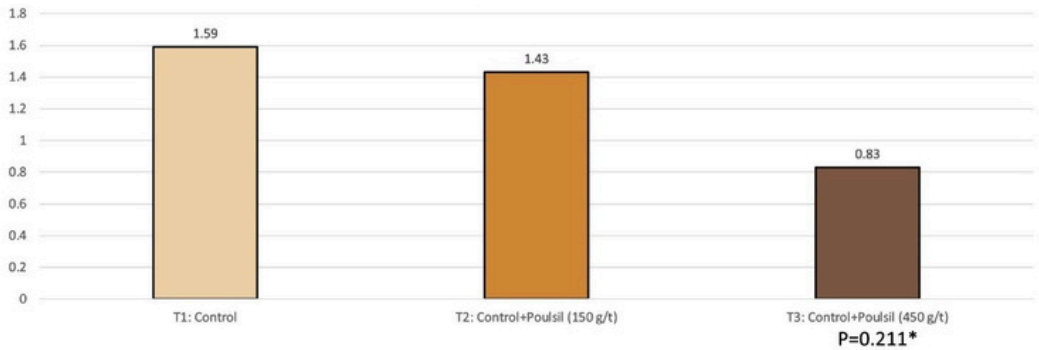
% Cracked Eggs

Lesser the % cracked eggs, better is the quality of egg.

Poulsil ® significantly reduced the percentage of cracked eggs.

% Cracked Eggs

*The average of the % cracked eggs from 27 – 30 weeks.



P=0.211*

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Added Value of Better Egg quality

- Better hatchability
- Greater egg production volume
- Lesser culled eggs
- Better hen day production & egg size

Application (Broiler, Breeder, Layer & Turkey)

Recommended dosage : 150g/ton
(21.4 mg Si /Kg of feed)

MANUFACTURER:

EYTELIA
we are silicium.

DISTRIBUTOR:

VETPHARM

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