

LIQUIPHOS® STRONG

POULTRY



P/Ca

POWERFUL PHOSPHORUS SOLUTION FOR
EGG-SHELL QUALITY AND BONE STRENGTH



LIQUID APPLICATION



LiquiPhos® Strong

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Why use LiquiPhos® Strong?

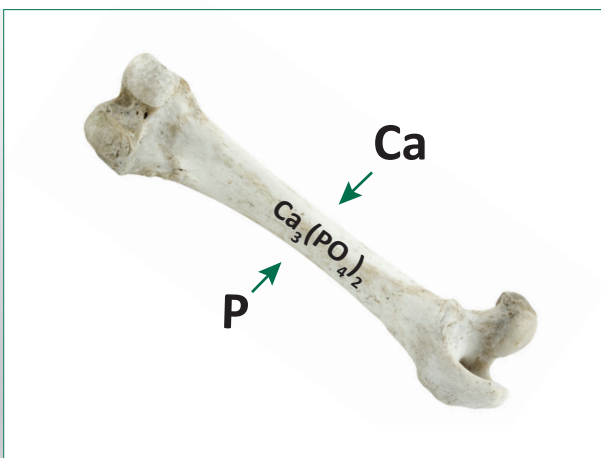
Phosphorus is an essential nutrient for all animals. Deficiency of phosphorus is the most common of all mineral deficiencies affecting livestock. Phosphorus must be balanced in the animal diet with adequate calcium and vitamin D for growth and reproduction. **LiquiPhos® Strong** provides highly available phosphorus to support maximum performance.

In poultry, phosphorus deficiency causes lower body weight, reduced feed efficiency, skeletal problems and reduced egg-shell quality. Low diet phosphorus can depress egg hatchability.

Caged layer hens require higher phosphorus contents than hens on litter resulting in a higher mortality rate.

LiquiPhos® Strong prevents phosphorus and calcium deficiency and thereby prevents depletion in performance and animal losses.

CONSEQUENCES OF PHOSPHORUS DEFICIENCY	
Cage layer fatigue	✓
Decreases reproduction and growth	✓
Leg weakness:	
Splayed leg syndrome	✓
Tibial dyschondroplasia	✓
Loss in appetite	✓
Rickets	✓
Thin or misshaped eggs	✓

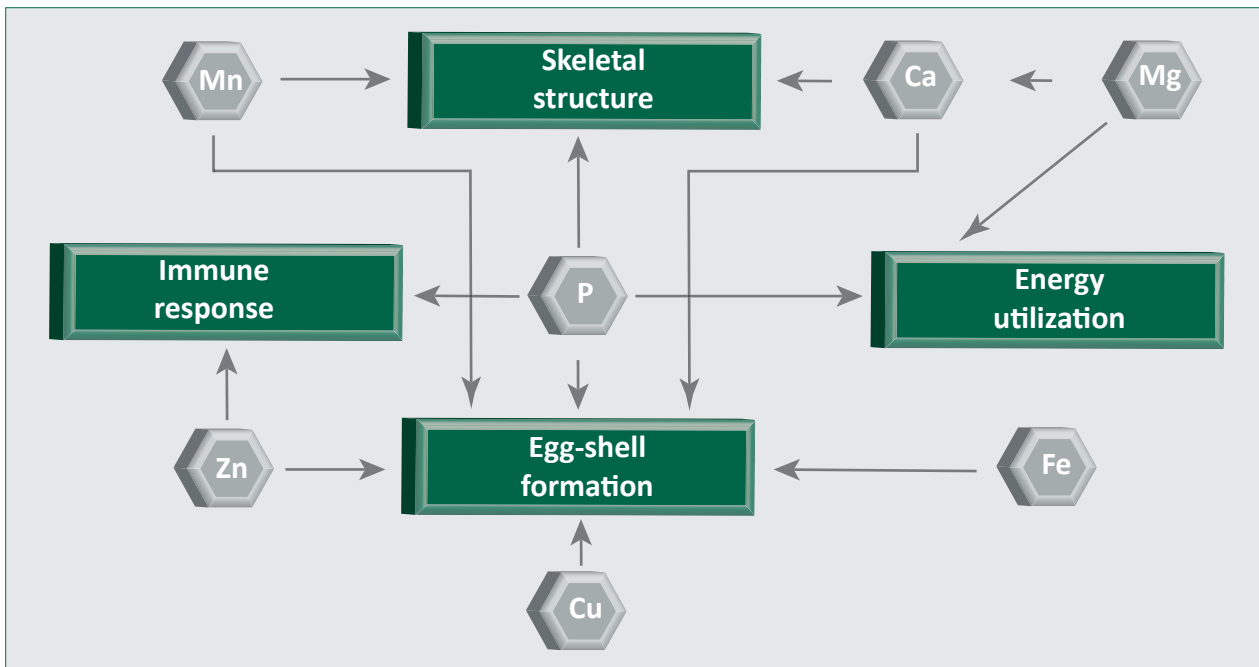


Bone mineralization and regulation of phosphate homeostasis.

Bone formation

The main proportion of phosphorus is needed for development and maintenance of skeletal tissue where it is incorporated with calcium in the form of calcium phosphate. The skeleton acts not only as stabilization system but also as a reservoir of calcium and phosphorus from that the rest of the body can draw. It undergoes a continuous process of absorption and release of calcium and phosphorus, particularly during animal pregnancy and lactation and, for hens, during the laying period.

Synergetic effects of active substances in LiquiPhos® Strong



Complex interactions between trace elements and minerals.

It must be understood that minerals and trace elements only operate by multiple interactions with each other. There is never any nutrient activity by itself. It is the multiple interactions of nutrients that is the basis for their biological function. For example, the minerals phosphorus and calcium plus the trace elements zinc, iron and copper are all involved, working in synergy, in the egg-shell formation. If any of these nutrients is missing,

the egg-shell formation will be impaired. The same refers to other physiological functions like immune response, skeletal structure or energy utilization.

Provision of a balanced mineral and trace element supplement like **LiquiPhos® Strong** allows animals to maintain health and optimum production by ensuring that no mineral or trace element imbalances or deficiencies occur.



Bone structure:

- Phosphor ensures strong bones
- Osteoblasts are generating Hydroxylapatite from phosphate- and calcium ions
- The bones are consisting of 50 % Hydroxyapatite



LiquiPhos® Strong ensures high performance in poultry.

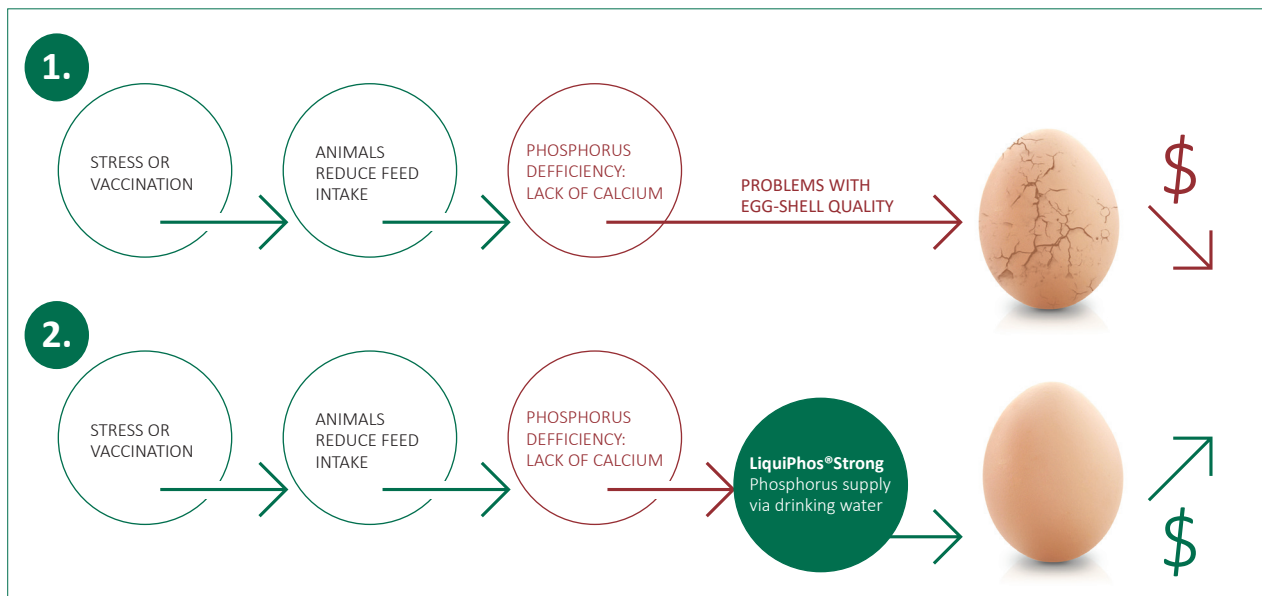
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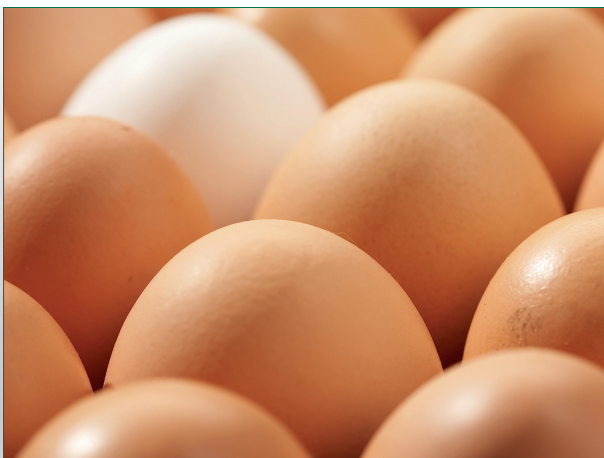
LiquiPhos® Strong strengthens egg-shell

Feed is consumed during the bright phase in the stable. The contained calcium and phosphorus from the feed are stored as $\text{Ca}_3(\text{PO}_4)_2$. During dark phases the egg-shell building takes place. Therefore calcium needs to be mobilized from the deposits. The stored phosphorus is excreted at the same time. Thus the deposits are

depleted. They have to be filled up again with the next feed intake. To enable an adequate storage of calcium, high amounts of phosphorus are needed. In case of stress or vaccination, the animals reduce their feed intake. Phosphorus becomes deficient – inadequate amounts of calcium are stored in the egg-shell.



LiquiPhos® Strong provides poultry with key minerals for high egg-shell quality.



Strong and uniform egg-shells are important for economics.



Increasing egg production with healthy layers.

LiquiPhos® Strong trial in layer breeders

LiquiPhos® Strong was tested in a commercial layer flock from laying start in week 24 until week 48. Two groups consisting of each around 8,400 female and 1,000 male birds were established. During the first seven weeks, both groups were treated identically. **LiquiPhos® Strong** was administered for four days in week 31, 36, 41, and 47 with a dosage of 1 ml per liter to the birds of the trial group.

Results

Figure 1 illustrates the number of cracked eggs per week. Arrows sign the weeks in which **LiquiPhos® Strong** was administered in the trial group. During the first seven weeks of lay, the number of cracked eggs naturally increased in both groups. The slope of the trial group surges even stronger in this period.

The first administration in week 31 markedly improved the number of cracked eggs. This respectable level was maintained until after the second administration in week 36. Even though the performance decreased again in the following weeks, the next administrations of **LiquiPhos® Strong** in week 41 and 47 reversed the negative trend again. Comparing the averages from week 31 until 48, the number of cracked eggs was around 25 % lower in the trial group showed in 387 vs. 520 cracked eggs.

Conclusion

The present trial proves that **LiquiPhos® Strong** is able to enhance egg-shell quality in layer breeders. The highly available phosphorus source improves the incorporation of calcium phosphate for egg formation.

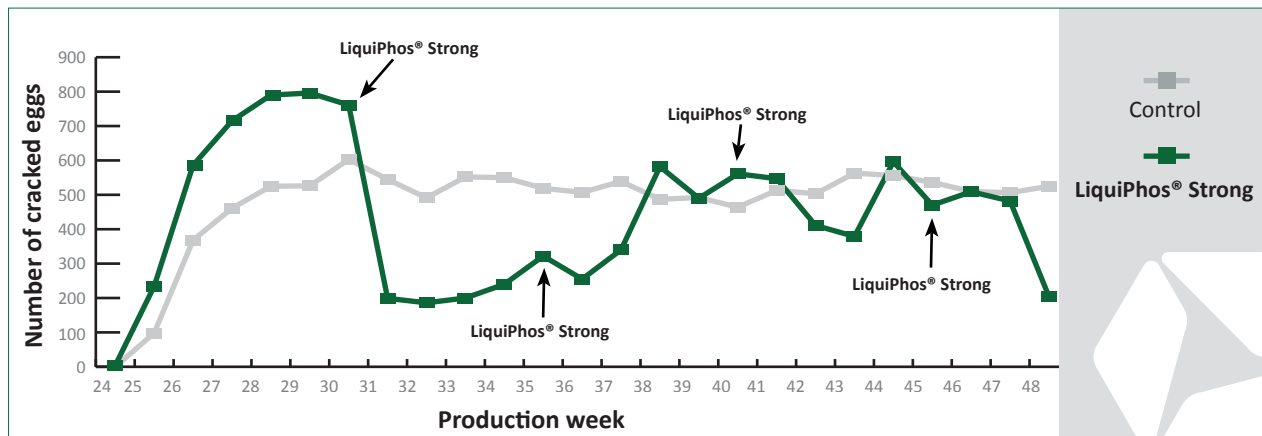


Figure 1: Trend of cracked eggs during the layer period.



Natural health - **LiquiPhos® Strong**.



High performance in breeder flocks.

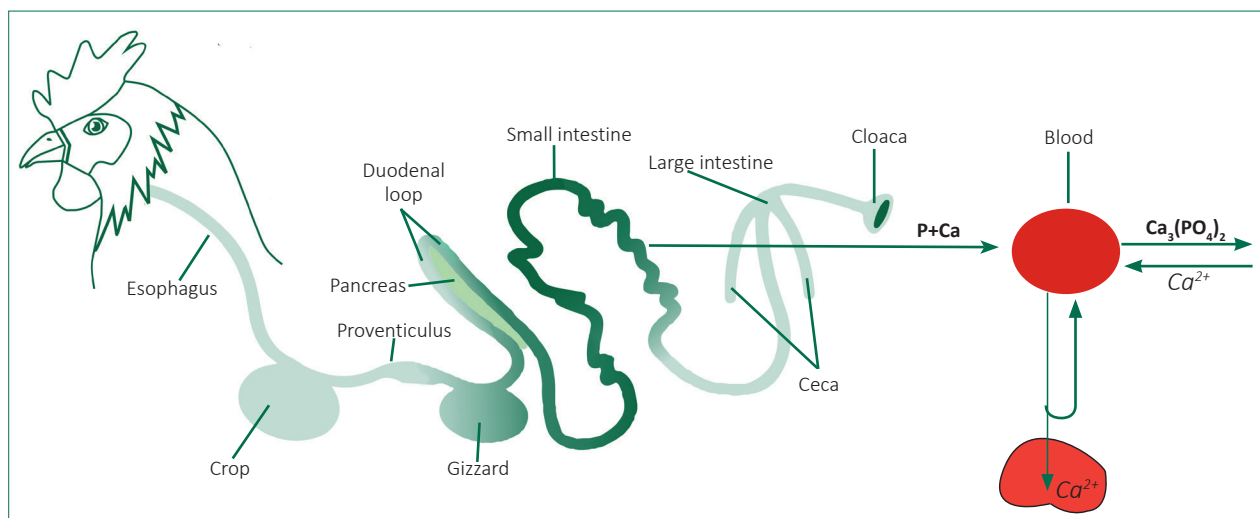
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Positive effects on bone mineralization

Due to fast growth and high productivity phosphorus and calcium needs to be available for metabolism to act against bone abnormalities and fractures. As calcium can

be added through the feed easily, mainly phosphorus is deficient during phases of rapid growth. Therefore it is advisable to supplement phosphorus through the water.



Phosphorus and calcium are the decisive minerals for bone mineralization.

⊕ Adequate phosphorus supply for growing chicks is the base for healthy bones throughout the fattening or laying period.

⊕ Highly available phosphorus ensures good fattening results of poultry.



LiquiPhos® Strong improves bone mineralization and bone strength.



- i. Strengthens bone stability
- ii. Improves egg-shell quality
- iii. Supports in periods of intense performance
- iv. Supportive in times of stress

Application of LiquiPhos® Strong.



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With you all the way!



Biochem Zusatzstoffe Handels- und Produktionsgesellschaft mbH

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