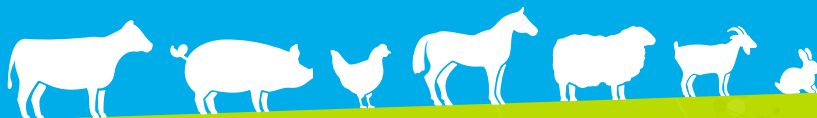


Heparenol®

A tender approach
to the liver



The smart choice
for healthy livestock



Supports normal liver function



Tasteful



Heparenol®

A tender approach to the liver

Food producing animals have a very active metabolism to sustain their often rapid growth and high production of eggs.

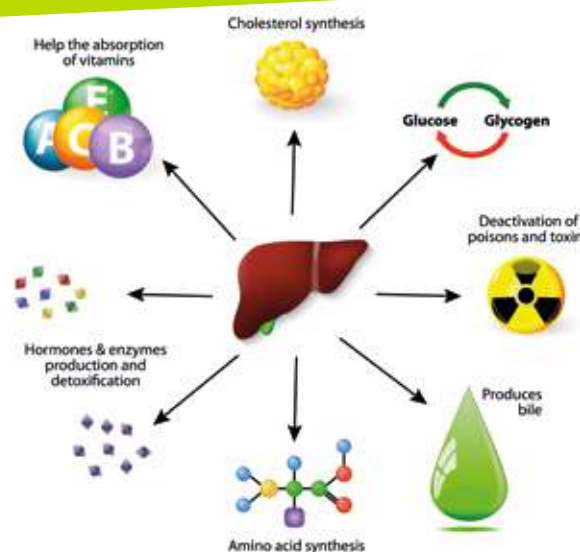
In this metabolism the liver is the key organ that plays a very important role in the synthesis of proteins, the production of enzymes to regulate the digestion and as an organ that de-activates toxins that are taken up by the body. It is the first gateway of nutrients absorbed by the gut, due to the fact that blood coming from the gut will first pass the liver, before it enters into the major circulation system. The liver consists of liver cells (hepatocytes) that are metabolic very active. The hepatocytes are grouped around the biliary system, where the bile produced by these cells is collected. Bile is facilitating fat digestion; fat is a nutrient which delivers a large amount of energy to the body.

All these various and important functions of the liver are needed for healthy and productive animals. However, due to the nature of the liver as first pass organ, there are many factors that could endanger the normal function of the liver. The content of the

food could be suboptimal or may contain toxins, there could be environmental factors playing a role like heat stress and even infectious diseases could impair the liver. This means that in many cases the liver could need a helping hand and support to maintain its performance in optimal shape.

Fatty liver haemorrhagic syndrome (FLHS) is a multi-factorial syndrome that is found mainly in laying hens. It is characterized by sudden mortality, a decrease in egg production and large amounts of fat in the liver found during necropsy.

Even though problems are often encountered during the peak of production, the onset of FLHS started already at an earlier stage. The first changes in the liver can already be observed at the onset of the reproductive period, and are related to the increase in synthesis of lipids and proteins destined for the egg yolk. However, no clinical signs are detected at this stage. The most profound changes occur at or after the peak of lay most probably induced by oestrogen persistence throughout the laying period.

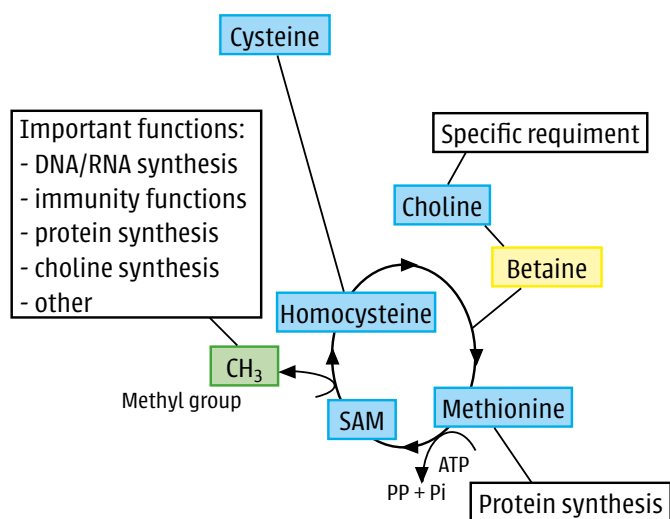


Heparenol is a supportive formulation which contains active ingredients like choline chloride, methionine and betaine that support the liver homocysteine and lipid metabolism. Due to the combination of above ingredients Heparenol contributes to the normal liver function to allow animals to have an optimal growth and performance.

References:

Shini, J. (2014) Fatty liver haemorrhagic syndrome in laying hens: field and experimental investigations. A thesis submitted for the degree of Doctor of Philosophy at The University of Queensland.

Images: Dopharma, Dreamstime, iStock



SAM = S-adenosyl methionine

PP = pyrophosphate

Pi = inorganic phosphate

Source: gg-tarim.com

Heparenol®

Pharmaceutical form

Oral solution

Composition

Contains sorbitol and sodium chloride.

Analytical constituents

Crude protein	9.8 %
Crude fibre	<2.0 %
Crude fat	0 %
Crude ash	2.5 %
Water content	48.0 %
Sodium (Na)	0.9 %
Lysine	1.3 %
Methionine	0 %
Digestible methionine equivalent	5.71%

Additives per litre

Nutritional additives

Vitamins and similar additives

Betaine anhydrate (3a920)	60 000 mg
Choline chloride (3a890)	75 000 mg

Amino acids

Hydroxy analogue of methionine (3c307)	79 000 mg
Lysine monohydrochloride (3.2.3)	15 000 mg

Sensory additives

Flavouring compounds

Mixture of flavouring compounds

Target species

Cattle, pig, poultry, horse, sheep, goat and rabbit

Usage

Complementary feedingstuff

- choline contributes to normal lipid metabolism.
- choline contributes to the maintenance of normal liver function.

Route of administration and dosage

Orally, via the drinking water or feed.

Poultry and rabbit:

200 ml per 1 000 kg bodyweight for 5 days.

Cattle, pig, horse, sheep, goat:

2 ml per 10 kg bodyweight for 5 - 10 days.

Storage conditions and shelf life

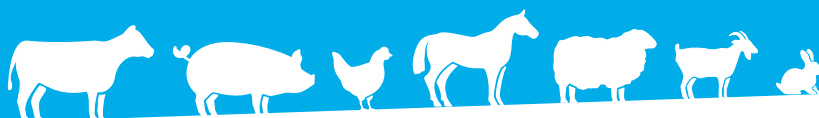
Shelf life of the product as packaged for sale: 36 months.

Packaging

Can 5 litres

Recognition number

FR-44.163.003



Heparenol®

*Choline chloride, betain, methionin,
lysin, sorbitol and plant extracts*



5L

Characteristic:

- **Liquid complementary feed with choline chloride, that contributes to a normal lipid metabolism and the maintenance of normal liver function.**
- **Contains plant extracts: artichoke and gentian.**

For more information:

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