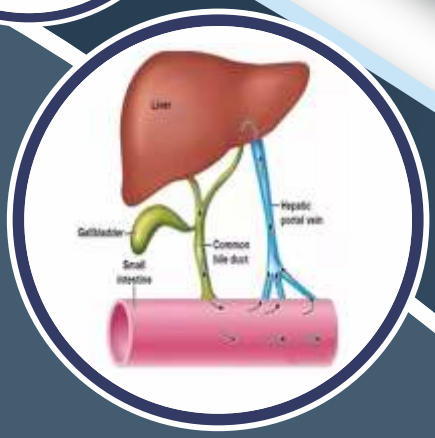




Healthy Birds Produce Healthy Food Products for the Nation

KUPF-CARE™

STMULATE HEPATOCYTES AND KUPFFER CELLS FOR BETTER HEPATIC HEALTH

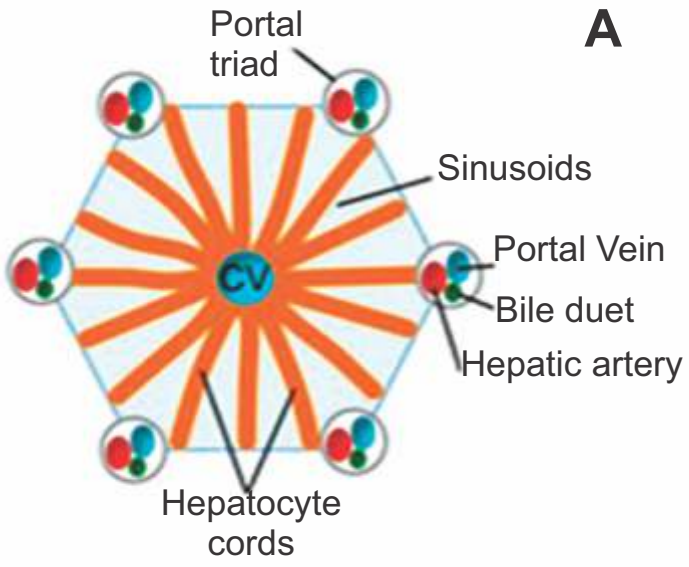
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KUPF-CARE™

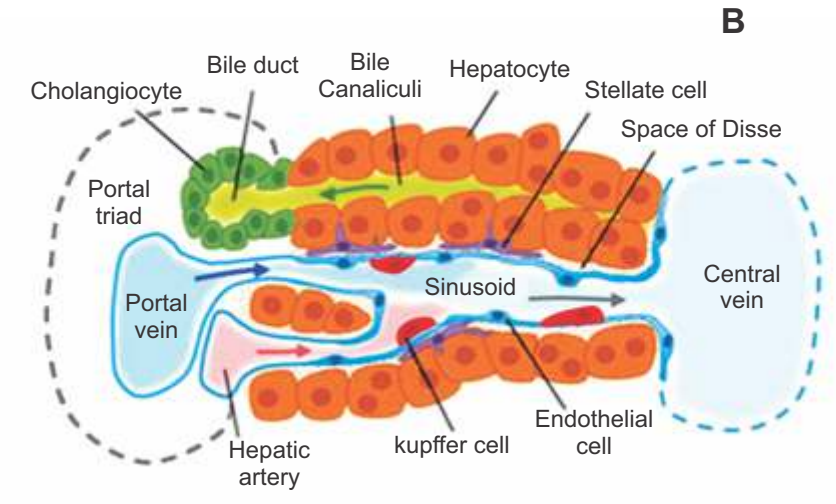
ENSURES HEALTHY LIVERS

Liver in poultry is constantly under threat and damage, due to the inflow of nutrients, bacteria, viruses, toxins, tannins and several anti nutritional factor's from the GITract, the liver is an essential organ of the digestive system and the largest gland of the body, it is metabolically the most active organ of the birds body, responsible for a variety of cellular functions including production of several varieties of enzymes and co-enzymes that catalyse different reactions and for the elimination of the waste products after the carbohydrate, lipid and protein metabolism, bile production, detoxification and immune cell activation to maintain liver homeostasis,The fat-soluble vitamins A, D, E, and K are stored in the liver. Some members of the B group of vitamins, particularly B1, B2, and niacin, are metabolized and stored in the liver. It also stores certain important minerals, such as iron and copper.

The liver lobule is formed by parenchymal cells (Hepatocytes) and non-parenchymal cells (Kupffer Cells). Hepatocytes occupy almost 80% of the total liver volume and perform numerous liver functions hepatocytes are the primary functional cells, responsible for metabolism and detoxification,while Kupffer Cells (KC) constitute approximately 15% of the total liver cell population, representing 80-90% of the total tissue macrophages in the body, that play a crucial role in immune defence, pathogen clearance by phagocytising pathogens, cell debris and, damaged red and white blood cells and thus ensuring the overall health of the birds. These Kupffer Cells reside in the hepatic sinusoids, which are the blood-filled spaces within the liver where blood flows from the portal vein to the hepatic vein. Reactive oxygen radicals are released by hepatic macrophages after activation with



cytokines, LPS and prostaglandins as a defence against bacterial invasion. Nitric oxide is produced in the liver by Kupffer cells and Hepatocytes. Kupffer cells also participate in protective mechanisms via the production of mediators that induce synthesis of the antioxidant agent glutathione.



Cytokine and chemokine production by activated Kupffer cells is involved in the pathogenesis of liver damage and its repair and regeneration process.

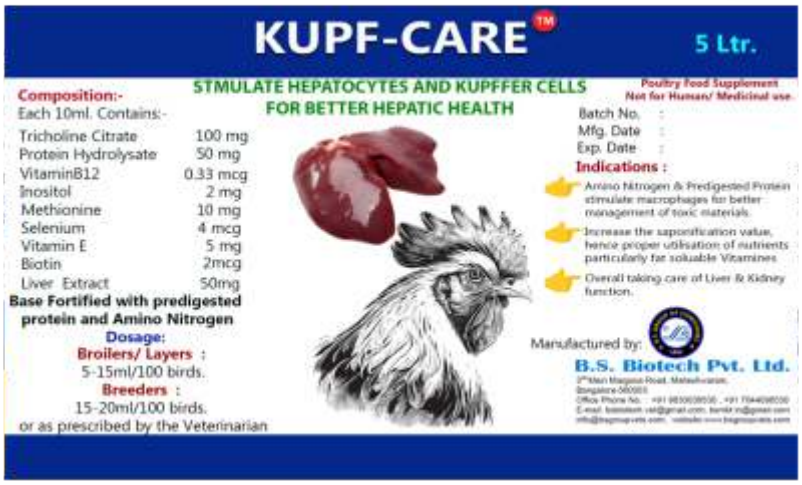
In liver injury and hepatocellular necrosis activated Kupffer cells are a major source of inflammatory mediators including cytokines, superoxide, nitric oxide, eicosanoids, chemokines, lysosomal and proteolytic enzymes and demonstrate increased cytotoxicity and chemotaxis.

Kupffer cells which are liver-resident macrophages, play a crucial role in the innate immune response by phagocytosing foreign materials, pathogens, and cellular debris, acting as a gatekeeper for the liver's immune system. The so-called Kupffer cells are liver-specific macrophages descending from monocytes and belonging to the specific immune defense. In a healthy liver, the Kupffer cells can eliminate about 95% of the bacteria arriving through the blood.

Kupffer cells interact with hepatocytes and other liver cells, influencing their functions and contributing to liver homeostasis and responses to injury.

1. Maintain the normal health of the liver. Regenerate and tone up liver cell resulting in better digestion of nutrients, their absorption and assimilation for growth, production and reproduction.
2. Counter the damaging effects of a variety of mycotoxins and drug metabolites on the birds liver.
3. Prevent fatty liver syndrome and reduce other hepatic problems and diseases.

4. Improve the birds immunity and vaccination response, thereby improving the resistance against different types of diseases.
5. Uniform and age related growth, maintain production and prevent fluctuation in production during periods of stress.
6. Improve overall performance and profitability.



Dosage :

Broilers/ Layers :

5-15ml/100 birds.

Breeders :

15-20ml/100 birds.

or as prescribed by the Veterinarian

Feed Premix : 1 kg per ton of feed regularly.

High moisture 2.5 kg per ton of feed.

or as prescribed by the Veterinarian.

Presentation:

1 Ltr, 5 Ltr & 25 Ltr.

Feed : 20 kg bags.

POULTRY FEED SUPPLEMENT
NOT FOR HUMAN / MEDICINAL USE

Composition

Tricholine Citrate	:	100 mg
Methionine	:	10 mg
Liver extract	:	50 mg
Protein Hydrolysate	:	50 mg
Inositol	:	2 mg
Vitamin B12	:	0.33 mg
Selenium	:	4 mcg
Vitamin E	:	5 mg
Biotin	:	2 mcg

Base fortified with Pre-digested Protein and Amino nitrogen

Indications

- **Amino Nitrogen & Predigested Protein stimulate macrophages for better management of toxic materials.**
- **Increase the saponification value, hence proper utilisation of nutrients particularly fat soluableVitamines**
- **Overall taking care of Liver & Kidney function.**

Manufactured by:
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