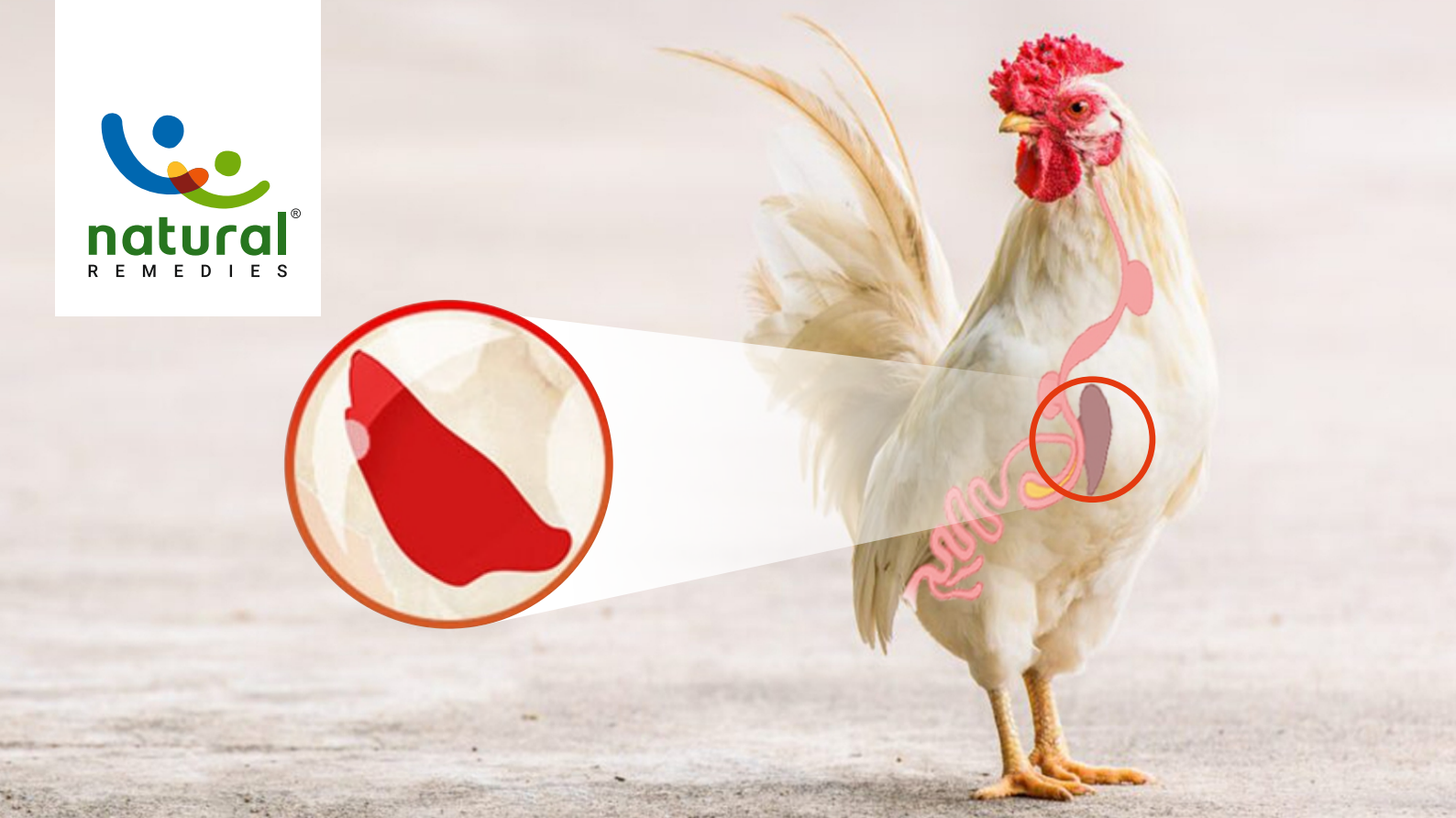
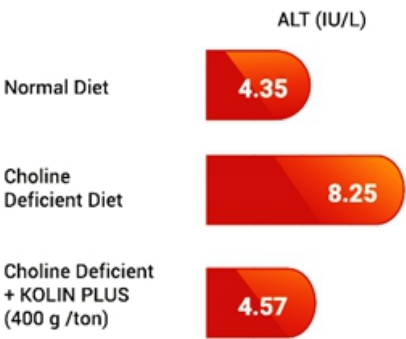




KOLIN PLUS[®] is Beneficial for Liver Health of Poultry

Liver plays a significant role in metabolism of nutrients. Hence, maintaining liver health is of important for the efficient fat metabolism and enhanced performance of poultry birds. There are several markers available that indicate liver function. Alanine transaminase (ALT) is an enzyme that helps to produce energy for the hepatocytes and releases into the blood stream at high level when the liver gets damaged. In a dose validation trial, KOLIN PLUS helps to maintain the optimum ALT level (4.57 IU/L) in an artificially induced choline deficient model of poultry birds. This is an evidence of improved liver function due to the supplementation of KOLIN PLUS in the diet of the poultry birds, which indicates that this herbal feed additive is effective in better fat mobilization (Figure 1).

Figure 1: Impact of KOLIN PLUS on ALT levels



Similarly, supplementation of KOLIN PLUS in broilers fed with choline deficient diet ensured normal liver architecture with optimum sinusoidal space. Hence, KOLIN PLUS is beneficial for liver health and prevents fatty liver condition among the birds (Figure 2).

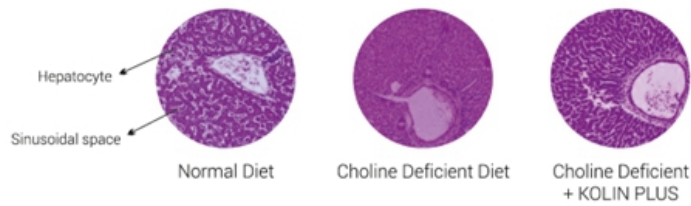


Figure 2: Effect of KOLIN PLUS on histology of hepatocytes and sinusoidal space

High triglyceride (TG) and cholesterol levels are the indicators of fatty liver disease. In an induced choline deficient model in broilers, KOLIN PLUS ensured optimum TG and cholesterol levels which indicates better fat metabolism (Figure 3).

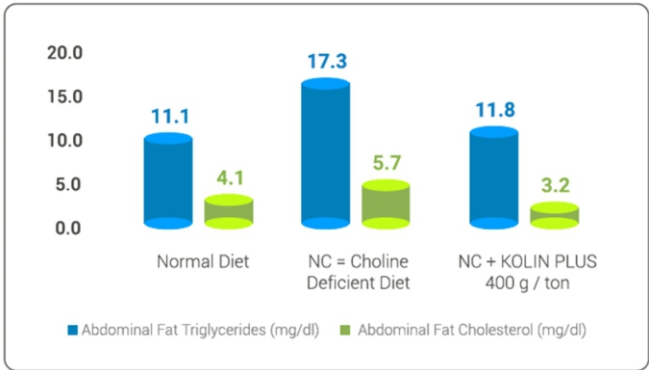


Figure 3: Effect of KOLIN PLUS on triglyceride and cholesterol levels

Another hepatic marker L-carnitine exhibits a significant role in sustaining the liver function. It transfers long chain fatty acids to mitochondria for subsequent -oxidation and facilitates lipid metabolism and mobilization. In a broiler trial in Kolkata, addition of KOLIN PLUS in ration showed better L-carnitine level

(256.94 nmol/ml) as compared to the normal control and choline chloride 60% supplemented groups and ensured improved fat metabolism and utilization (Figure4).

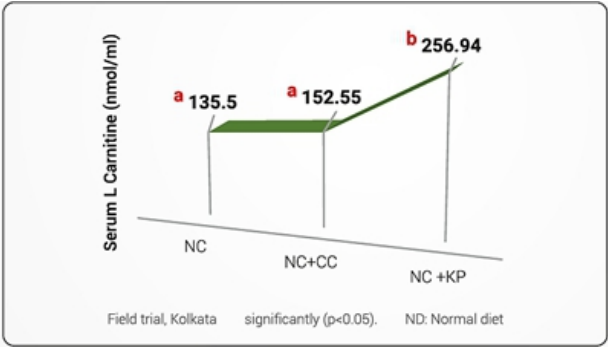


Figure 4: Impact of KOLIN PLUS on Serum L-Carnitine levels

In an experimental trial, Cobb broilers were allotted into 3 dose groups like Normal control (NC) without choline chloride (CC) 60%, NC + CC 60% and NC + KOLIN PLUS. KOLIN PLUS supplementation showed reduced carcass fat weight among the birds as compared to NC without CC 60% group which is an evidence of improved fat mobilization and utilization (Table1).

Table 1: Effect of KOLIN PLUS on carcass fat

Groups	Carcass Fat (g)
Normal control (NC) without CC 60%	^b 28.04
NC + CC 60%	^a 20.59
NC + KOLIN PLUS	^a 21.66

Data expressed as mean of 5 birds from each group, differ significantly (p<0.05)

Therefore, KOLIN PLUS is greener alternative of choline chloride that safeguards liver from oxidative damage and fatty degeneration. It helps in lipid metabolism and mobilization. It supports in muscle growth, reducing abdominal fat and carcass fat. Thus, KOLIN PLUS improves the liver health and substantiates maximum growth and production of the broilers.

References

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