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## LIST OF ABBREVIATION

<b>FAO</b>	Food Agricultural Organization
<b>AFTB<sub>1</sub></b>	Aflatoxin B <sub>1</sub>
<b>AFTB<sub>2</sub></b>	Aflatoxin B <sub>2</sub>
<b>AFG<sub>1</sub></b>	Aflatoxin G <sub>1</sub>
<b>AFG<sub>2</sub></b>	Aflatoxin G <sub>2</sub>
<b>AF</b>	Aflatoxin
<b>TLC</b>	Thin Layer Chromatography
<b>UV</b>	Ultraviolet
<b>µg/kg</b>	Microgram / kilogram
<b>AST</b>	Aspartate Aminotransferase
<b>ALT</b>	Alanine aminotransferase
<b>IU/Kg</b>	International Unites / kilogram
<b>GSH-PX</b>	Glutathione peroxidase
<b>BHA</b>	Butylated hydroxyanisole
<b>BHT</b>	Butylated hydroxytoluene
<b>GT</b>	Green tea
<b>AFM</b>	Aflatoxin
<b>AFL</b>	Aflatoxicol
<b>LD<sub>50</sub></b>	Lethal dose for 50 % of animal test populations
<b>Se</b>	Selenium
<b>Mg/kg B.W</b>	Milligram / kilogram Body Weight
<b>SGOT</b>	Serum Glutamic Oxaloacetic transaminase
<b>GOT</b>	Glutamic oxaloacetic transaminase
<b>OCT</b>	Ornithine carbamyl transferase
<b>IDH</b>	Isocitric dehydrogenase
<b>ALP</b>	Alkaline phosphate

<b>PUFA</b>	Polyunsaturated fatty acids
<b>LDL</b>	Low-density lipoprotein
<b>AFT</b>	Aflatoxin
<b>YES</b>	Yeast extract sucrose
<b>g/L</b>	Gram/Litre
<b>PDA</b>	Potato dextrose agar
<b>CHE</b>	Cholesterol esterase
<b>CHOD</b>	Cholesterol oxidase
<b>MDH</b>	Malate dehydrogenase
<b>LDH</b>	Lactate dehydrogenase
<b>LSD</b>	Least significant different
<b>Vit.</b>	Vitamin
<b>BUN</b>	Blood Urea Nitrogen
<b>S.E.</b>	Standard error
<b>IP</b>	Interperitoneal
<b>X</b>	Mean

## **SUMMARY**

The aim of this study was to investigate, the toxicological effects of aflatoxins on male albino rats and the role of vitamins supplementation to overcome the toxicological effects of aflatoxins (AFT) in male rats.

### **The results revealed that:**

1- Results revealed that rats fed on AFT-contaminated diet showed decrease in liver and body weight, while kidney weight were increased in AFT treated group as compared with control group.

The aflatoxin decreased growth rate, feed intake and feed efficiency.

2- Aflatoxin increased the glucose level and decreased the cholesterol level in blood. Activities of blood alanine aminotransferase (ALT) and aspartate aminotransferase (AST) were increased by aflatoxin, however, the glutathione peroxidase (GSH-Px) activity in the blood was decreased by aflatoxin.

3- Histopathological study revealed severe degenerative and necrotic changes in liver and kidney.

### **4- In vitamins supplemented group:**

The results showed that increase in the body weight was recorded in groups supplemented with vitamins A,  $\beta$ -carotene and E, and increase in liver weight after supplementation with vitamin E was recorded.

- The kidney weights of rats treated with vitamin A,  $\beta$ -carotene and vitamin C showed a decrease.
- ALP activity was decreased in  $\beta$ -carotene, vitamin C and vitamin E, supplemented groups.
- ALT activity was decreased in all vitamins supplemented rats.
- AST activity was decreased in  $\beta$ -carotene groups.

- BUN (blood urea nitrogen) was decreased with  $\beta$ -carotene treatment compared with AFT treated group.
- Supplementation with vitamins improved the growth rate and significantly decreased the activities of ALP and ALT particularly after treatment with vitamins  $\beta$ -carotene, C and E. The severity of pathological changes was relatively less in all vitamins supplemented groups.
- Vitamins supplementation reduced the toxicity of aflatoxins through partially correcting and improving the biochemical parameters and histopathological changes.

**Histopathological study:**

- The study showed several degenerative and necrotic changes in liver and kidney.

**Liver:**

- The results showed that, degeneration of hepatic cells and diffused fatty change scattered all over the hepatic parenchyma.

**Kidney:**

- The results showed that dilatation and congestion of renal blood vessels associated with interstitial hemorrhage in between the renal tubules in addition to perivascular round cell aggregation.