MYCOAD MYCOAD AZ

Anti-Mycotoxin Additives

EFFICACY OF MYCOAD AGAINST AFLATOXIN IN LAYERS

EXPERIMENTAL PROTOCOL

Caged ISA Brown layers already in production were transferred from a commercial farm to an experimental unit at Samitec in Santa María, RS, Brazil. A seven-day adaptation period to the new facilities was allowed before starting the trial at 40 weeks of age. Birds were distributed using a complete randomized design into 3 treatments with 4 replicates of 10 layers each kept in communitarian cages (1.40 m²/cage) with slatted floor, equipped with semi-automatic feeders and automatic nipple drinkers. The building was maintained at an environmental temperature of 20°C ± 1°C and all laying hens were kept under uniform management conditions. All ingredients were tested free of mycotoxins contamination. The aflatoxin (AFL) used for the contaminated diets was produced in LAMIC (Lab. of Mycotoxicological Analysis). At the beginning of the trial feed consumption was kept at 120 g/bird and later increased based on egg production, following the genetic management guide. Water was supplied *ad libitum* and the experimental diets fed for 41 days. Performance parameters and egg characteristics were evaluated weekly. The relative weight of the liver was evaluated at the end of the trial.

Treatment	Aflatoxin	MYCOAD
1. Control	—	—
2. AFL	3 ppm	—
3. AFL+MYCOAD	3 ppm	* 0.25 %

* 0.25% = 2.5 kg **MYCOAD**/MT

RESULTS

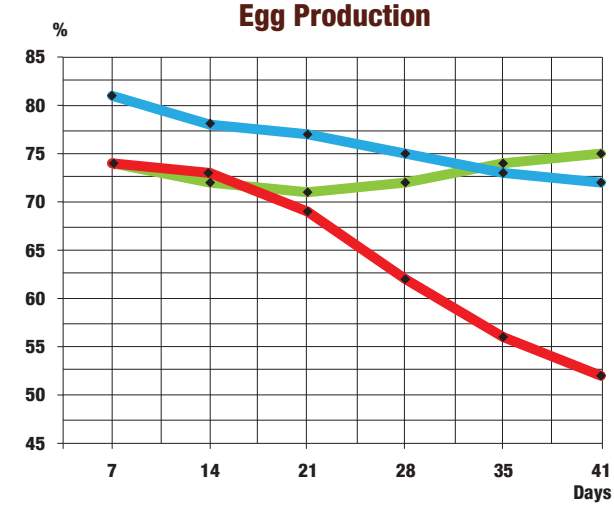
Performance, egg quality and relative liver weight after 41 days of treatment

Treatment	Egg Production %	Egg Mass kg	Egg Weight g	Feed Conversion kg/kg	Meat and blood spots %	Liver Weight %	Mortality %
Control	74.54 a	1.88 a	61.3 a	2.61 a	0.60 c	2.31 c	0
3 ppm AFL	51.84 b	1.28 b	59.8 c	3.76 b	0.75 a	2.97 a	5.0
3 ppm AFL 0.25% MYCOAD	71.87 a	1.80 a	60.5 b	2.70 a	0.69 b	2.67 b	2.5

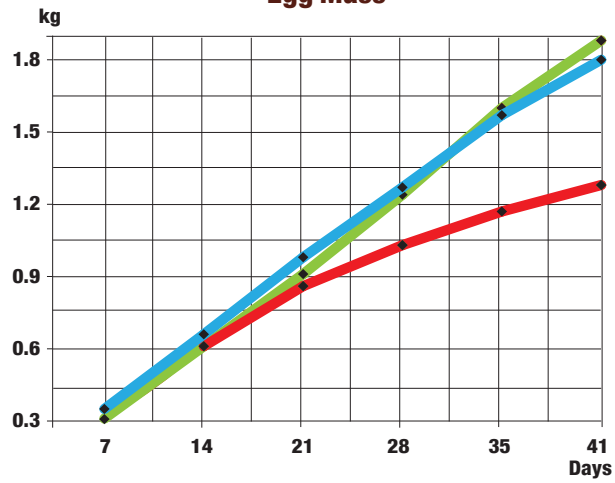
a, b, c Values within each column with different letters are significantly different (P< 0.05)

◆ Control ◆ 3 ppm Aflatoxin ◆ 3 ppm Aflatoxin + MYCOAD

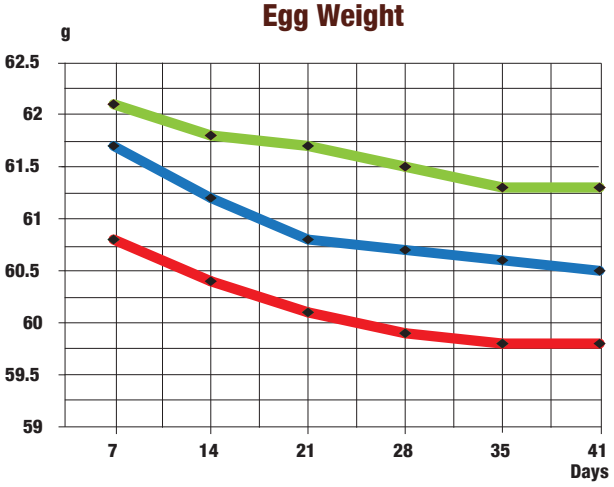
Egg Production



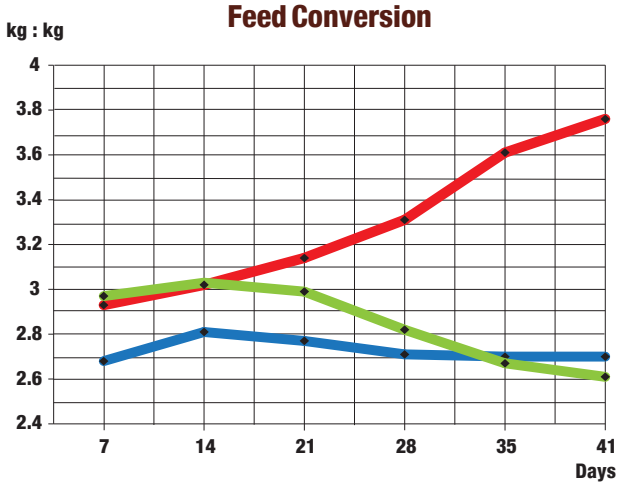
Egg Mass



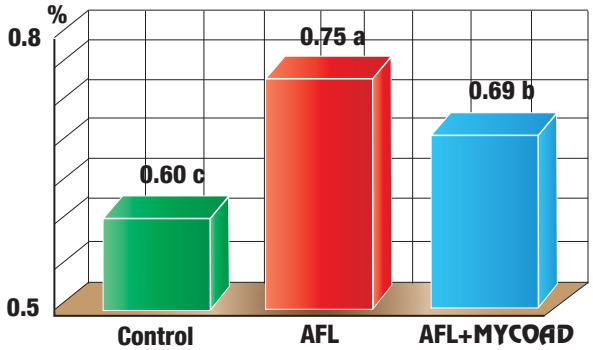
Egg Weight



Feed Conversion



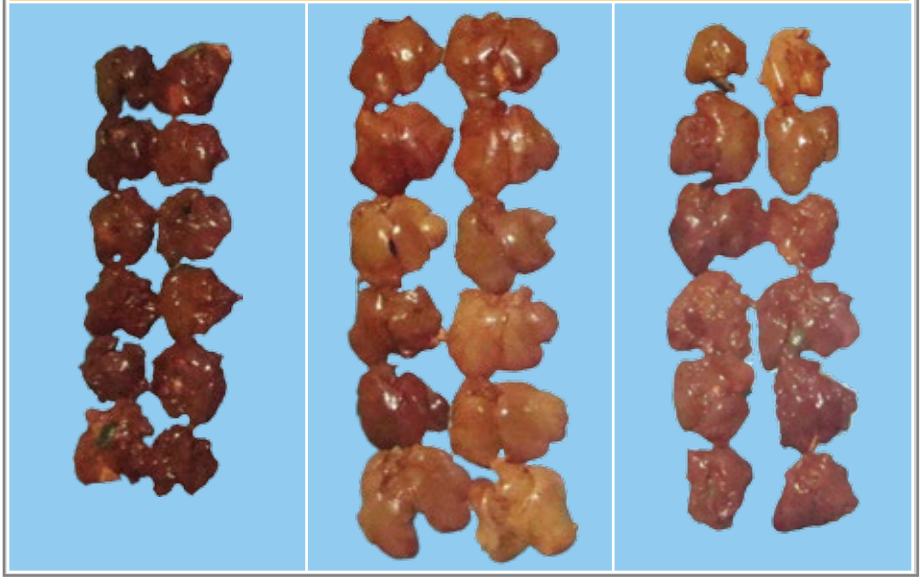
Meat and blood spots



a, b, c Values with different letters are significantly different (P< 0.05)

Livers of 46 week-old hens after 41 days of treatment

Control	Aflatoxin	Aflatoxin + MYCOAD
2.31 c	2.97 a	2.67 b



Beneficial effects of MYCOAD

Treatment	3 ppm Aflatoxin	3 ppm Aflatoxin +0.25 % MYCOAD
Egg production	- 30.5 %	+ 28.0 %
Egg Mass	- 31.9 %	+ 28.9 %
Feed Conversion	+ 44.1 %	- 28.6 %
Relative Liver Weight	+ 28.6 %	- 11.2 %
Meat and Blood Spots	+ 25.0 %	- 8.7 %

CONCLUSIONS

The addition of 0.25% of **MYCOAD** to a layer diet contaminated with aflatoxin significantly improved egg production, egg mass and feed conversion with a significant decrease in the liver size and the presence of meat and blood spots in the eggs.

MYCOAD demonstrated its efficacy in preventing the toxic effects caused by aflatoxin in laying hens.

EFFICACY OF MYCOAD + MYCOAD AZ AGAINST AFLATOXIN + FUMONISIN + T-2 TOXIN IN LAYERS

EXPERIMENTAL PROTOCOL

Exactly the same protocol described in the previous trial was used in this experiment. **MYCOAD** and **MYCOAD AZ** were both added to the feed as anti-mycotoxin additives. A combination of mycotoxins, including aflatoxin, fumonisin (FUM) and T-2 toxin (T-2) were simultaneously added to the contaminated diets. All mycotoxins were produced by LAMIC.

Treatment	Aflatoxin	Fumonisin	T-2 Toxin	Mycoad + Mycoad AZ
1. Control	—	—	—	—
2. AFL+FUM+T-2	3 ppm	10 ppm	1 ppm	—
3. AFL+FUM+T-2 MYCOAD+MYCOAD AZ	3 ppm	10 ppm	1 ppm	* 0.25 % + 0.10 %

* 0.25% = 2.5 kg **MYCOAD**/MT
0.10% = 1.0 kg **MYCOAD AZ**/MT

RESULTS

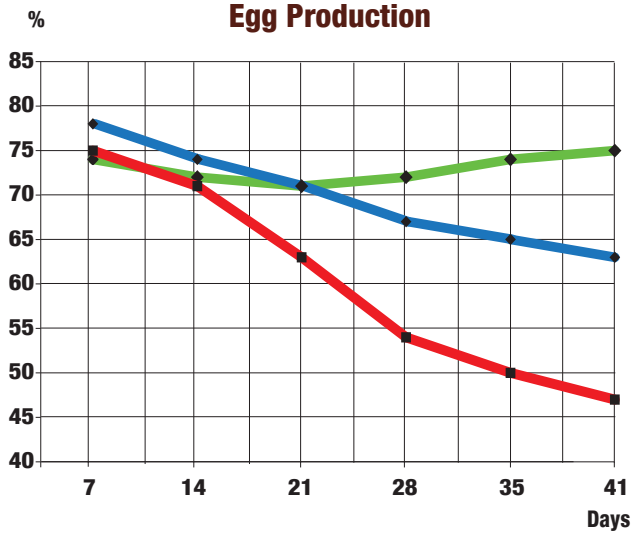
Performance, egg quality and relative liver weight after 41 days of treatment

Treatment	Egg Production %	Egg Mass kg	Egg Weight g	Meat and Blood spots %	Feed Conversion kg/kg	Liver Weight %	Mortality %
Control	74.54 a	1.88 a	61.3 a	0.60 c	2.61 a	2.31 c	0
3 ppm AFL 10 ppm FUM 1 ppm T-2	47.14 c	1.17 c	60.2 b	0.79 a	3.87 c	3.25 a	0
AFL+FUM+T-2 MYCOAD 0.25 % MYCOAD AZ 0.1 %	62.78 b	1.54 b	59.8 b	0.68 b	3.01 b	2.90 b	2.5

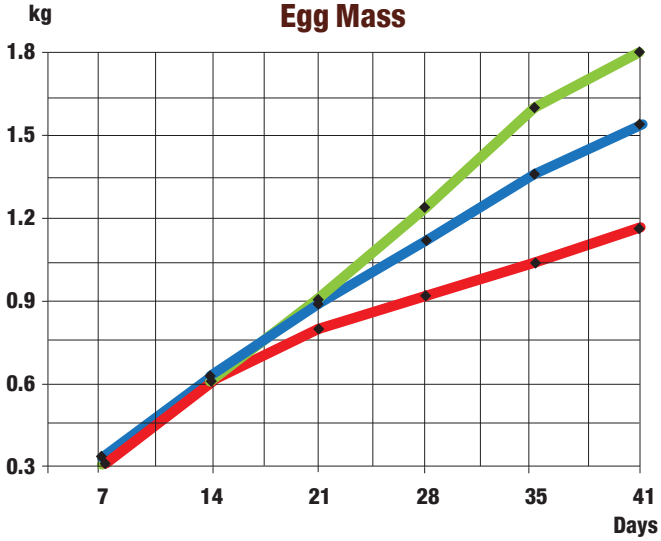
a, b, c Values within each column with different letters are significantly different (P< 0.05)

◆ Control ◆ AFL + FUM + T-2 ◆ AFL + FUM + T-2 + MYCOAD + MYCOAD AZ

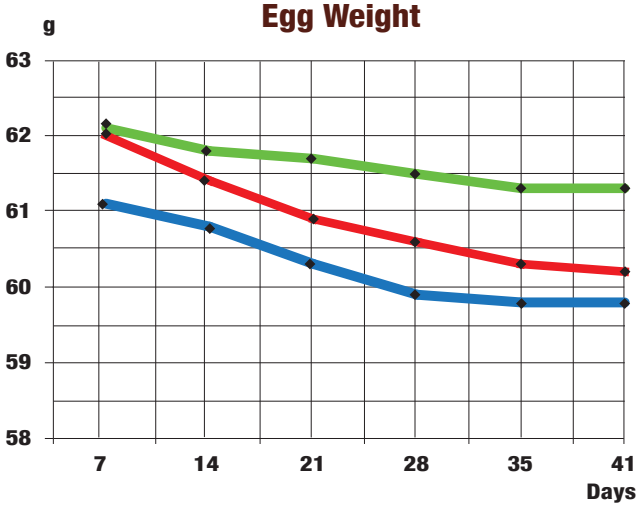
Egg Production



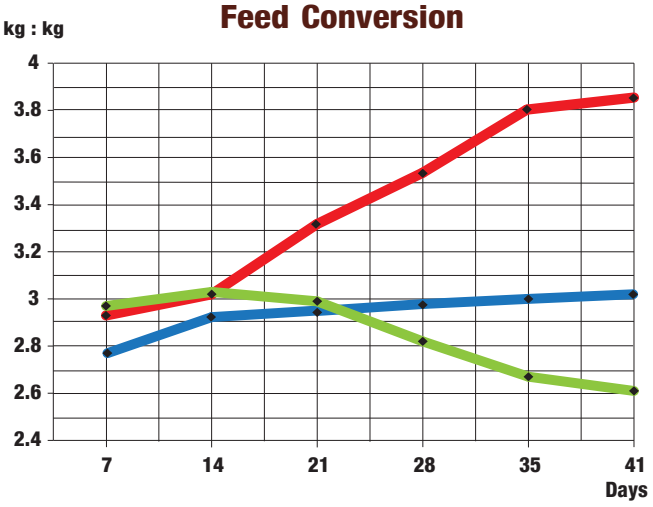
Egg Mass



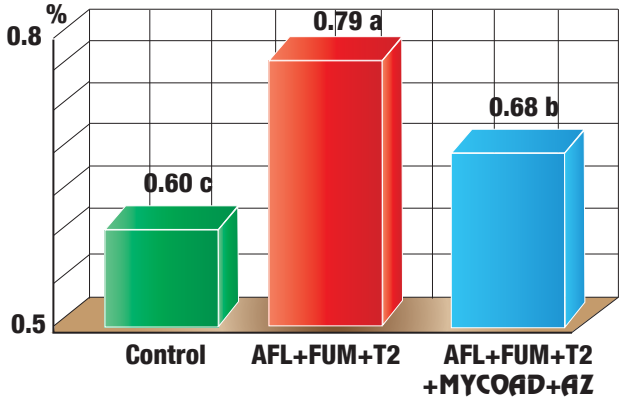
Egg Weight



Feed Conversion



Meat and blood spots



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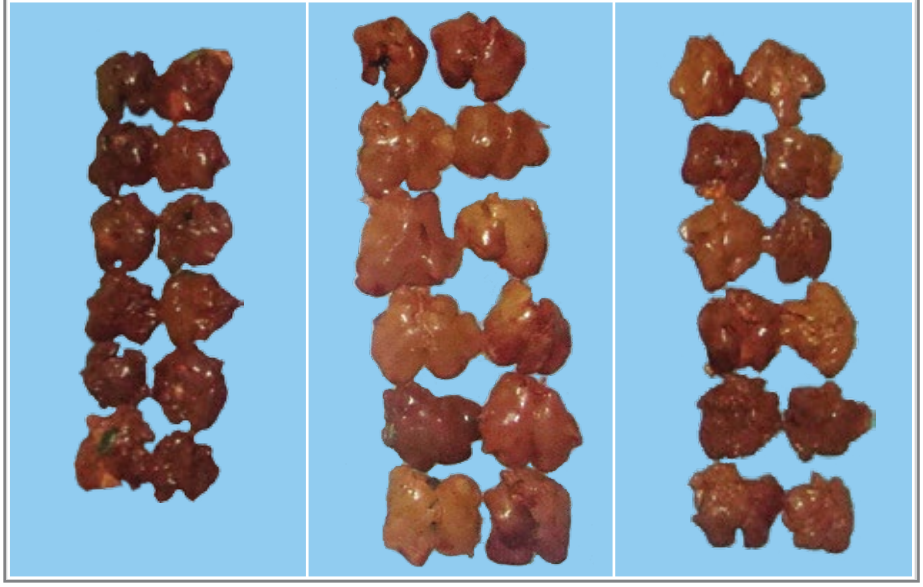
Livers of 46 week-old hens after 41 days of treatment

Control	AFL+ FUM+T-2	AFL+FUM+T-2 +MYCOAD+MYCOAD AZ
2.31 c	3.25 a	2.90 b



Beneficial effects of MYCOAD + MYCOAD AZ

Treatment	AFL+FUM+T-2	AFL+FUM+T-2 +MYCOAD+MYCOAD AZ
Egg production	- 36.8 %	+ 33.3 %
Egg Mass	- 37.8 %	+ 31.6 %
Feed Conversion	+ 48.3 %	- 22.2 %
Relative Liver Weight	+ 40.7 %	- 15.2 %
Meat and Blood Spots	+ 31.7 %	- 16.2 %

CONCLUSIONS

The combination of 0.25% of **MYCOAD** + 0.10% **MYCOAD AZ** added to the diet contaminated with aflatoxin, fumonisin, and T-2 toxin, significantly improved egg production, egg mass and feed conversion with a significant decrease in the liver size and the presence of meat and blood spots in the eggs.

MYCOAD AZ combined with **MYCOAD**, demonstrated its efficacy in preventing the toxic effects caused by the combination of aflatoxin + fumonisin + T-2 toxin in laying hens.

Reference. Mallmann, C. A., D. Sturza, L. Giacomini, M. Contreras, and D. Zaviezo. Evaluation of two anti-mycotoxin additives in commercial layers. Instituto Samitec – Lamic – UFSM, Brazil. Special Nutrients, USA (for publication)

MYCOAD MYCOAD AZ

Does your Anti-Mycotoxin Additive meet the basic TOP & FACTS?

Target Organ Protection			
MYCOTOXIN	ORGAN	MYCOAD	MYCOAD AZ
Aflatoxin	Liver	YES	NO
Ochratoxin	Kidney	YES	NO
T-2 Toxin	Oral lesion	YES	YES
Fumonisin	Heart / Lung / Liver	YES	YES*
Zearalenone	Reproductive	N/A	YES
DON	Liver	N/A	YES

FACTS	MYCOAD	MYCOAD AZ
In vivo dosage with **TOP** results	2.5 kg / MT	1 kg / MT
Recommended **commercial dosage**	2.5 kg / MT	1 kg / MT
The **clay** is **always obtained** from the **same mine**	YES	YES
Approved in **Texas**, **USA**, against Aflatoxin	YES	N/A
Approved in the **European Union** against Aflatoxin. Regulation #1831 / 2003 (1m 588)	YES	N/A
ENDOTOXIN adsorption	N/A	YES
Efficacy approved by **LAMIC** and other institutions against the following number of mycotoxins	4	4
Efficacy approved by **LAMIC** and other institutions in different types of animals	6	5
Nutrient adsorption	NO	NO
In vitro efficacy test every:	100 MT	18 MT

* Test performed with 4 kg with 30,000 ppb of Fumonisin
N/A= not applicable

MYCOAD = Cobind, Toxfree Standard
MYCOAD AZ= Cobind AZ, Toxfree

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THE MYCOTOXINS SPECIALIST
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