MYCO-AD DF

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MYCOAD A-Z ®

DESCRIPTION

MYCO-AD DF is a hydrated sodium/calcium aluminosilicate (HSCAS) developed specifically to control Aflatoxicosis in cattle.

MYCOAD A-Z is a purified and activated HSCAS composed of dipolar phylosilicates specially formulated to adsorb and retain all major mycotoxins affecting cattle.

DOSAGE

MYCO-AD DF = 50 g/cow/day

MYCOAD A-Z = 20 g/cow/day

APPLICATION

Both products can be added to the mixer, together with all other feedingredients or supplemented through a premix. Mix homogeneously.

COMPATIBILITY

Both products are compatible with all feed ingredients and do not affect or absorb any of the feed components (amino acids, vitamins, minerals, etc.)

PACKAGING

25 kg bag. Four-ply bags (three paper plies and one inner plastic ply).

SPECIAL NUTRIENTS, INC.

The mycotoxins specialist

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MYCO-AD DF

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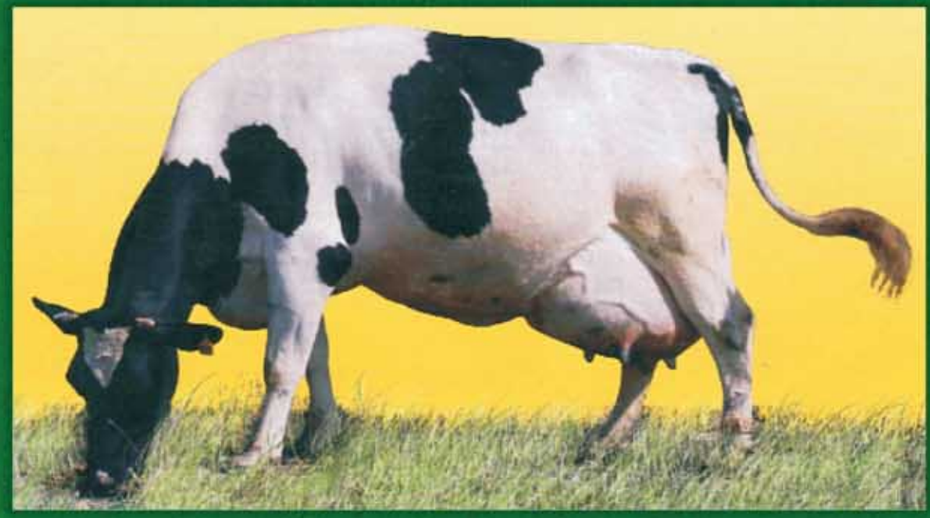
MYCOAD A-Z ®

Potency Certified with the Most Efficient Quality Control Program in the Industry

Zearalenone > 95% efficacy
Fumonisin > 85% efficacy
Ochratoxin > 90% efficacy



CATTLE

SPECIAL NUTRIENTS, INC.
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There is a general understanding that ruminants are less susceptible to mycotoxins detrimental effects due to the metabolizing action of rumen microflora. However, metabolites produced in the rumen can be equally or more toxic than the original mycotoxin. There are even evidences of toxic metabolites derived from originally innocuous compounds.

IN VITRO EVALUATION

It is important that the *in vitro* results represent the net adsorption capacity of the product, meaning that both the adsorption and desorption process has occurred through a pH change, mimicking what occurs in the intestinal tract of animals. Adsorption results from tests performed only at a low pH do not assure that the product can retain the mycotoxin when the pH rises.

Figure 1. Average net adsorption capacity of MYCO-AD DF using HPLC test with 3 ppm (3000 ppb) and 5 ppm (5000 ppb) of aflatoxin and the equivalent of 2.5 kg of product per MT.

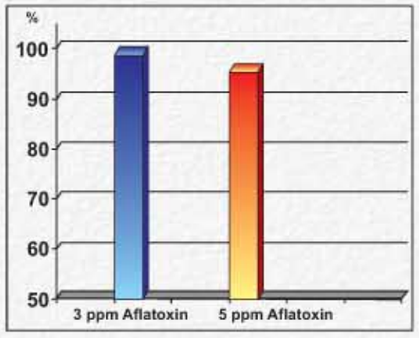
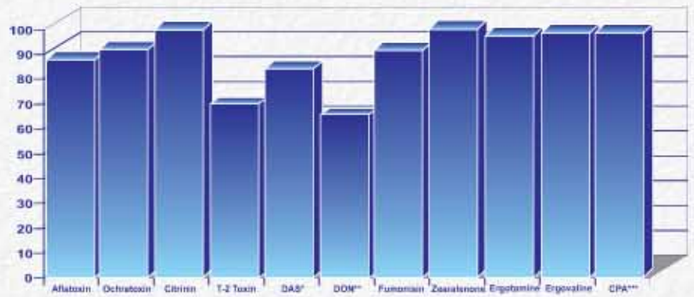


Figure 2. Average net adsorption capacity of MYCOAD A-Z using HPLC test with 3 ppm (3000 ppb) of all the mycotoxins tested and the equivalent of 1.0 kg of product per metric ton.



DAS = Diacetoxyscirpenol.
DON = Deoxynivalenol. Mycoad AZ was tested at an inclusion rate of 2.5 kg/mt.

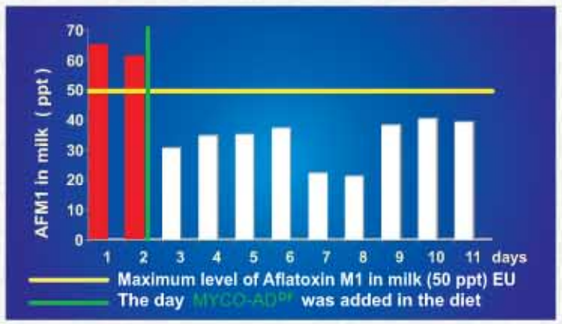
CPA = Cyclopiazonic acid.

IN VIVO EVALUATION

MYCO-AD DF EFFECT ON THE REDUCTION OF AFLATOXIN M1 IN MILK

Experiment 1. Purina field test in a commercial farm in Parma, Italy
Type of animals: 800 commercial dairy cows in production.
MYCO-AD DF inclusion rate: 50 grams/cow/day.

Figure 3. Presence of aflatoxin M1 in milk after adding MYCO-AD DF in the ration (50 g/cow/day)



Conclusion

MYCO-AD DF at a dose of 50 g/cow/day is capable of reducing significantly in only 12 hours the presence of aflatoxin M1 in milk to levels under the maximum established (50 ppt) by the European Union legislation.

Experiment 2. Experimental Farm, Faculty of Agronomy. University of Piacenza, Italy.
Type of animals: 24 commercial dairy cows in production.
Experimental design: Latin square with 4 treatments of 6 cows each. Each week a group of 6 cows received a different treatment. Products A and B were used at manufacturer recommended dose.
MYCO-AD DF inclusion rate: 60 grams/cow /day.
Concentration of aflatoxin B1 in the feed: 10 ppb.

Table 1. Effect of different binders in the reduction of AFM1 in milk in 4 groups of cows (6 cows each) after treatment with different mycotoxin binders.

Treatment	Wk 1 AFM_1 ppt	Wk 2 AFM_1 ppt	Wk 3 AFM_1 ppt	Wk 4 AFM_1 ppt	Reduction %
Control	31	23	18	25	-
Product A	23	19	16	24	15.5
Product B	13	15	5*	14	51.5
MYCO-AD DF	7	8	6	9	69.1

* This group of cows consumed Mycoad DF the previous week

Conclusion

Contamination of 10 ppm of AFB1 in the feed did not result in elevated levels of AFM1 in milk. However, it is evident that MYCO-AD DF was the most effective mycotoxin binder in reducing AFM1 in milk.

Reference: Cavassini P. and D. Zaviezo. Efficacy of Mycoad DF in the reduction of aflatoxin M1 content in milk. Special Nutrients' bulletin.

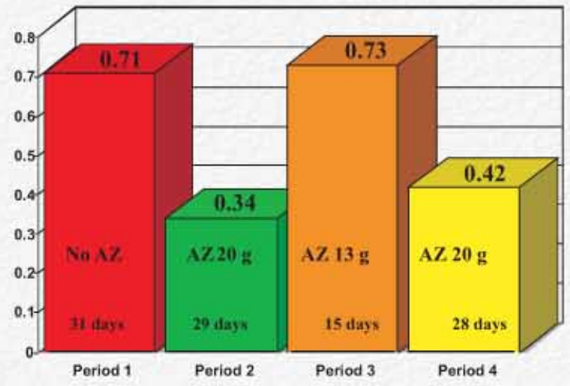
MYCOAD A-Z EFFECT ON REDUCING ABORTIONS DUE TO ZEARALENONE

Facilities: Commercial farm in Coahuila, Mexico.
Type of animals: 800 Commercial dairy cows (Holsteins).

MYCOAD A-Z inclusion rate: Used for 4 consecutive periods of time for all animals at different concentrations: 31 days with no product, 29 days with 20 g/cow/day, 15 days with 13 g/cow/day and 28 days with 20 g/cow/day.

Concentration of natural mycotoxins. Natural zearalenone content ranged from 100 to 900 ppb in raw materials, and 100 to 400 ppb in feed rations as determined by laboratory tests (Elisa).

Figure 4. Effect of MYCOAD A-Z on the incidence of non-infectious daily abortion rate by period of administration in dairy cattle.



P1= Control (No MYCOAD A-Z in the ration.)
P2= MYCOAD A-Z (20 g/cow/day) administered immediately after P1
P3= MYCOAD A-Z (13 g/cow/day) administered immediately after P2
P4= MYCOAD A-Z (20 g/cow/day) administered immediately after P3

Conclusion

— Continuous administration of MYCOAD A-Z at a dosage of 20g/cow/day significantly reduced non-infectious daily abortion rate during the testing period.

— Daily administration of MYCOAD A-Z in feed rations of dairy cattle helps to control abortions produced by zearalenone contamination.

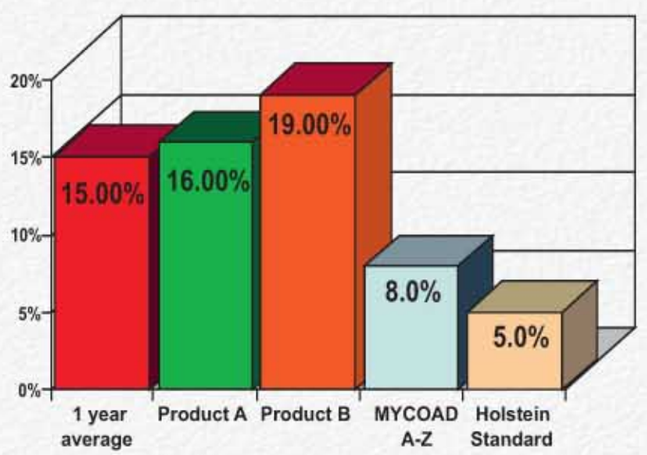
— MYCOAD A-Z maintained the expected productivity rate of pregnant cattle by controlling the estrogenic adverse effects of zearalenone.

Reference: Jaramillo, H., A. Villarreal and D. Zaviezo. Effect of Mycoad AZ in the prevention of abortions in dairy cattle. 8° Pan-American Dairy Congress. 2004. Miami Beach, Florida, USA.

MYCOAD A-Z AND OTHER MYCOTOXIN BINDERS EFFECT ON ABORTIONS CAUSED BY ZEARALENONE

Facilities: Commercial farm located in Guanajuato, Mexico.
Type of animals: 468 Commercial dairy cows (Holsteins).
Inclusion rate.
MYCOAD A-Z= 20 g/cow/day
Commercial product A= 300 g/cow/day
Commercial product B= 500 g/cow/day
Concentration of natural mycotoxins. All raw ingredients showed concentrations of 200 to 300 ppb of zearalenone (Elisa test).

Figure 5. Effect of different mycotoxin binders on the abortion rate during the 30-day experimental period compared to the average breed standard and the one year average in that farm.



Conclusion

— Zearalenone concentrations above 200 ppb are capable of increasing toxic abortion rates when compared to Holstein's breed standards.

— Commercial products A and B did not show any effect in controlling the abortion rates in the cows used in this trial.

— MYCOAD A-Z reduced the 12-month average abortion rate in 7.39%, getting a final performance close to the breed standard.

Reference: Rivera, R., R. Borbolla, E. Soto, D. Sarfati and D. Zaviezo. Effect of different mycotoxin binders in the incidence of abortion in dairy cattle. 8° Pan-American Dairy Congress. 2004. Miami Beach, Florida, USA.