



Mycotoxin | Test 2

Environmental Consulting Services – Dairy

Researcher:

Environmental Consulting Services, Gordon W. Rose, Ph.D., Study Director

Subject:

Evaluation of fusariotoxin binding properties of candidate animal feed ingredients additives.

Evaluation Substrate:

Ground corn, treated and untreated with candidate mycotoxin-binding compounds. The treated substrates involved the following concentrations of the compounds being tested for mycotoxin-binding effectiveness:

1. Nova SilT	- 5.0 kilos per metric ton, (0.5%)
2. Milbond TX	- 5.0 kilos per metric ton, (0.5%)
3. AZOMITE®	- 10 kilos per metric ton, (1.0%)
4. AZOMITE®	- 5.0 kilos per metric ton, (0.5%)

Mycotoxin Employed:

3,000 PPB's of zearalenone, T-2 toxin, and vomitoxin or deoxynivalenol (DON) acquired from Sigma Chemical Company.

Aflatoxin B₁ Assay Method:

Neogen Corporation Assay Kits. The ground corn plus mycotoxin-binding compound plus each fusariotoxin were thoroughly admixed, allowing to remain intact for a 48-hour exposure interval and assayed for residual, unbound fusariotoxin. Each untreated control substrate contained only the experimental fusariotoxin.

<u>Assay Results:</u>	<u>PPB's of residual fusariotoxin(s)</u>		
	Zearalenone	T-2 Toxin	Vomitoxin (DON)
1. Untreated Control (Mycotoxin Only)	3,000	4,200	4,000
2. Nova SiIT 5.0 kilos/Metric Ton	2,000	2,000	2,000
3. Milbond TX 5.0 kilos/Metric Ton	2,000	2,500	2,500
4. AZOMITE® 10 kilos/Metric Ton	1,500	2,000	1,800
5. AZOMITE® 5 kilos/Metric Ton	1,500	2,000	1,000

Study Conclusion:

There appears to be little, if any difference between binding efficacies of 1.0% w/w and 0.5% w/w AZOMITE®. Compared to the other binders evaluated, AZOMITE® was a more efficient in vitro chelator or binder of the experimental levels of fusariotoxins.