

Corn Mold

(Continued from Page 23)

Penn State.

According to Dr. Nelson, who is nationally recognized for his work with molds and mycotoxins, conditions this year have been good for the production of vomitoxin (DON) and zearalenone. Fumonison and T-2, two other Fusarium mycotoxins, have not been a problem. Neither has aflatoxin, which is more common under hot, dry conditions.

To find out what sort of test results are showing up, I also contacted several laboratories: Summerdale Laboratory (Summerdale, Pa.), Myers Analytical Laboratory (Littlestown,

Pa.), Lancaster Laboratory (Leola, Pa.), Skyview Laboratories (Somerset, Pa), Eastern Laboratories (York, Pa.), and Romer Laboratories (Union, Mo.).

Summerdale labs, which is administered by the Bureau of Animal Industry, has been running 45-50 corn samples per month this fall. They do an ELISA screen and follow that with HPLC or GLC for quantitative measurement. More than half of the feed and grain samples run since July have been positive for mycotoxins, and of those, nearly 80 percent have contained vomitoxin. Very little aflatoxin has been found. An occasional sample will con-

tain T-2 or zearalenone. So these results match Dr. Nelson's comments almost exactly.

Of the remaining laboratories, two reported results similar to that of Summerdale, with vomitoxin accounting for most of the positive tests. Two other labs have done little mycotoxin testing, although they have the capability. And one laboratory has found little or no vomitoxin, but lots of aflatoxin — results that are questionable at best.

What To Do If You Have Mycotoxin Contamination

1. For aflatoxin, one decon-

tamination method I'm aware of is ammoniation. Since this requires special equipment and a healthy investment, it's not practical for most producers.

2. A relatively new feed additive, Nova-Sil, has been effective in reducing the harmful effects of aflatoxin. Nova-Sil is an aluminosilicate that was developed as a flow agent to reduce caking in feed. It also has the effect of absorbing aflatoxin when added at the rate of 10 pounds per ton. The cost is about \$.25 per pound. In experiments with young pigs, it almost completely reversed the effects of aflatoxin. Unfortunately it provides only a marginal response against vomitoxin and zearalenone.

3. Raising the selenium levels to 2.5 ppm (which is 8 times the legal level) may also help reduce the effects of aflatoxin. Because the maximum allowable addition of selenium is .3 ppm, I do not recommend feeding 2.5 ppm.

4. Anitox Vana and ammonium carbonate are claimed to reduce the harmful effects of vomitoxin. However, research from Canada shows little effect of either of these materials.

5. Commercial mold inhibitors and organic acids (fumaric, citric, propionic, acetic) do inhibit mold growth in feed. However, when mycotoxins are a problem, they're usually in the corn before it's ground and

(Turn to Page 27)

Test For Mycotoxins

(Continued from Page 21)

samples or mail them overnight to the laboratory.

Don't mail on Fridays or weekends to most laboratories.

Quantitative or confirmatory tests may cost from \$75 to \$150 each, at some laboratories.

They are available at a modest charge at the State Diagnostic Laboratory, P.O. Box 367, Summerdale, PA 17903-0367 (telephone 717-787-8808). A processing period of seven to 14 days or more may be necessary for confirmatory mycotoxin testing.

Usually 20 percent to 40 percent of the suspected feeds tested for mycotoxins may test positive.

Some laboratories are reporting as high as 80 percent to 90 percent positives, mainly Fusarium toxins this winter.

Some of these positive feeds can be used at reduced levels for some animals or may be sufficiently low to not be indicated in animal problems.

Interpretation of tests and diagnosis is hampered by many factors, including a lack of specific tests for many of the mycotoxins known to exist, few hard data on harmful levels, possible additive effects from several mycotoxins being present at low levels, and the minute amounts of mycotoxins that may be present in only part of the supply of a particular feed.

Use the guidelines available on PENpages (contact Extension) and elsewhere in interpreting test data.

Effects on performance and related health symptoms must be considered, as well as levels and types of mycotoxins found.

Feeds with over 20-40 ppb aflatoxin should be considered highly suspect for young animals, and those with over 100 ppb on a dry matter basis for older animals.

Those containing over 1.0-1.5 ppm of other mycotoxins should be highly suspect of harmful involvement.

Moldy feeds or those with the above or higher levels of mycotoxins should be at least temporarily discontinued when their use is accompanied by marked performance reduction or related health symptoms that are otherwise unexplained.

If moderate performance effects are noted without health symptoms, reduce the level of positive or suspected feeds with mold present.

Removal or appreciable reductions in suspected feeds should result in considerable improvement within three to seven days in many cases.

Mycotoxin levels indicated here are referred to on a dry matter basis. Often laboratory results are given on an as fed or as received basis. Thus, it is important to know how reports are given and express them on a dry matter basis for interpretation.

Levels of aflatoxin in the total ration dry matter should be limited to 20-40 ppb for milk cows. A longer recovery period may be needed for animals with considerable liver or kidney involvement

Aluminosilicates and some bentonites may be fed to partially reduce harmful effects and levels of aflatoxins in the milk.

Good News Travels Fast

The 1992 Penn State Commercial Hybrid Evaluations Are In And DEKALB'S NEW Hybrids Are Ahead Of The Pack.

Zone 1 Short Season*:			SILAGE ENTRIES		
	Yield	DEKALB Bushel Advantage	Silage Performance Of Late Season Hybrids		
			Yield T/A	Dry Matter T/A	
NEW DK512	161.5		DEKALB DK743	24.6	8.6
NEW DK522	165.1		Pioneer 3154	24.3	8.5
DK524	159.0		Hytess HTX7748	24.2	8.4
Average	161.9		Northrup King N8727	23.0	8.1
Pioneer 3751	134.7	27.2	Pioneer 3192	23.2	8.1
Funks G4106	135.4		Prairie Stream SX556	22.8	8.0
G4231	114.9		NC+ 7507	22.7	8.0
G4292	116.7		Doebblers 87XP	22.3	7.8
Average	122.3	39.6	Pioneer 3241	22.4	7.8
Doebblers 48XE	132.4		Asgrow RX899	22.2	7.8
49XP	128.1		Hardy HB6345	22.1	7.7
Average	130.3	31.6	Pioneer 3140	21.5	7.5
			Hardy HB6334	21.4	7.5
Zone 2 Late-Medium Season* Two Year Performance			Pioneer 3245	21.1	7.4
	Yield	DEKALB Bushel Advantage	Doebblers 82XP	21.2	7.4
DEKALB DK646	142.4		NC252 X FA879	21.2	7.4
Doebblers 66XP	128.8	18.6	Pioneer 3293	21.0	7.4
73XP	138.0	4.4	Doebblers 86XA-2	20.8	7.3
69XP	123.1	19.3	Prairie Stream SX2023	20.6	7.2
75X	125.8	16.6	Muncy Chief XA7790	20.5	7.2
Funks 4530	130.9	11.5	Doebblers 944-3	20.2	7.1
4543	130.7	11.7	Prairie Stream SX704	19.9	6.9
Pioneer 3527	124.0	18.4	Wetsel S120	19.3	6.8
3394	130.0	12.4	Eastland E886	18.7	6.5
3295	132.7	9.7	Muncy Chief XA777	16.3	5.7
3293	135.1	7.3			
3241	134.0	8.4			

* For Complete Information Contact Penn State Agronomy Dept.