

Mycotoxin Occurrence in 2022 US Corn Grain



MARCH 2023

MYCOTOXIN *monthly*



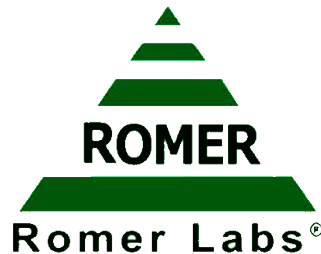
DSM

BRIGHT SCIENCE. BRIGHTER LIVING.

Mycotoxins & Analysis



LC-MS/MS



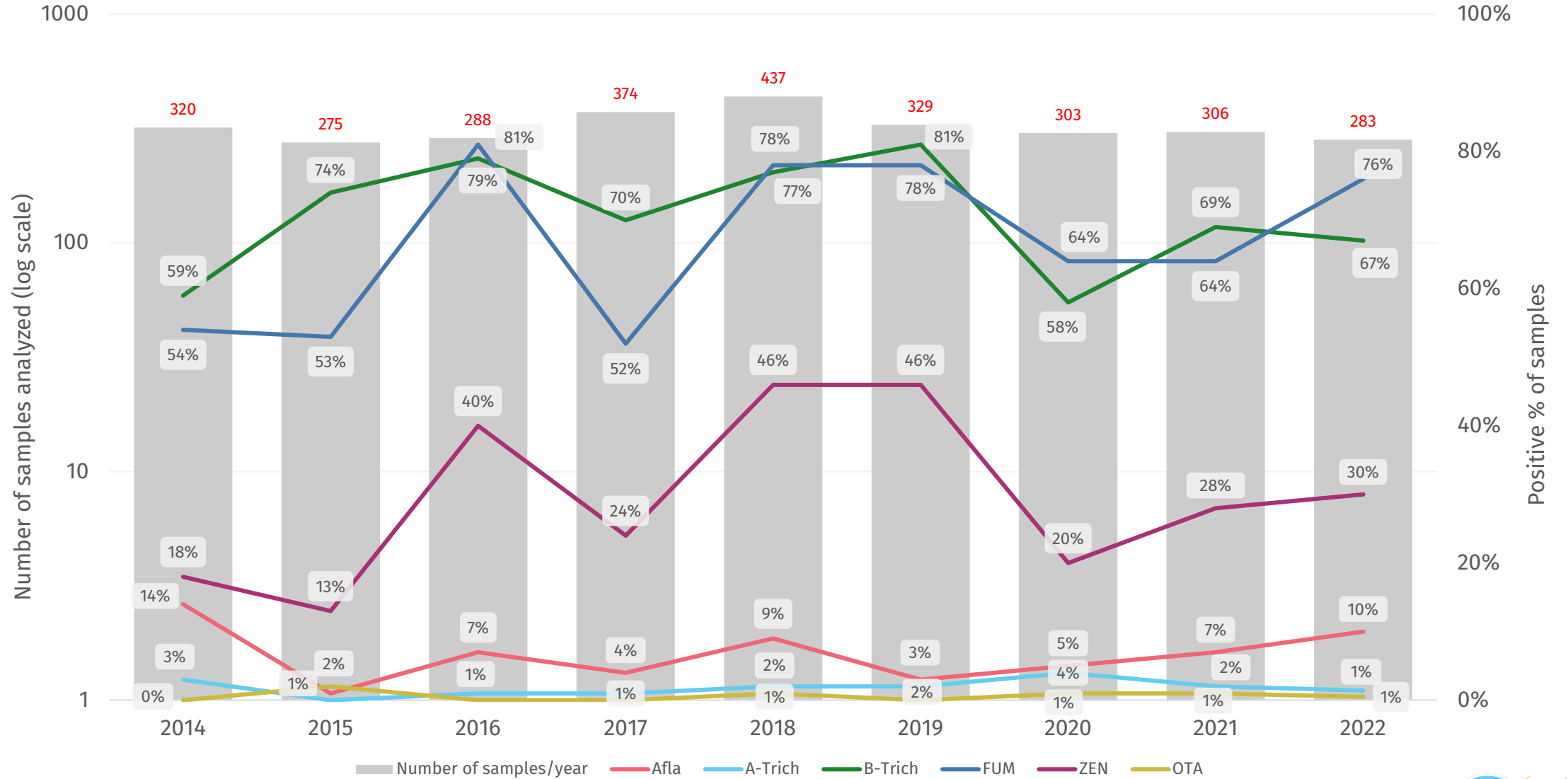
The survey results represent samples sent in for surveillance testing only and does not include any sample submitted following clinical signs.

Mycotoxin Group*	Mycotoxins	Limit of Detection (ppb)
Aflatoxins (Afla)	Aflatoxin B1	1.3
	Aflatoxin B2	1.2
	Aflatoxin G1	1.1
	Aflatoxin G2	1.6
A-Trichothecenes (A-Trich)	T-2 Toxin	100.0
	HT-2 Toxin	100.0
	Neosolaniol	100.0
	Diacetoxyscirpenol (DAS)	100.0
B-Trichothecenes (B-Trich)	Deoxynivalenol (DON/Vomitoxin)	100.0
	Acetyl-deoxynivalenol (AcDON)	100.0
	Nivalenol (NIV)	100.0
	Fusarenon X (FusX)	100.0
Fumonisin (FUM)	Fumonisin B1	100.0
	Fumonisin B2	100.0
	Fumonisin B3	100.0
Zearalenone (ZEN)	Zearalenone (ZEN)	51.7
Ochratoxin A (OTA)	Ochratoxin A (OTA)	1.1

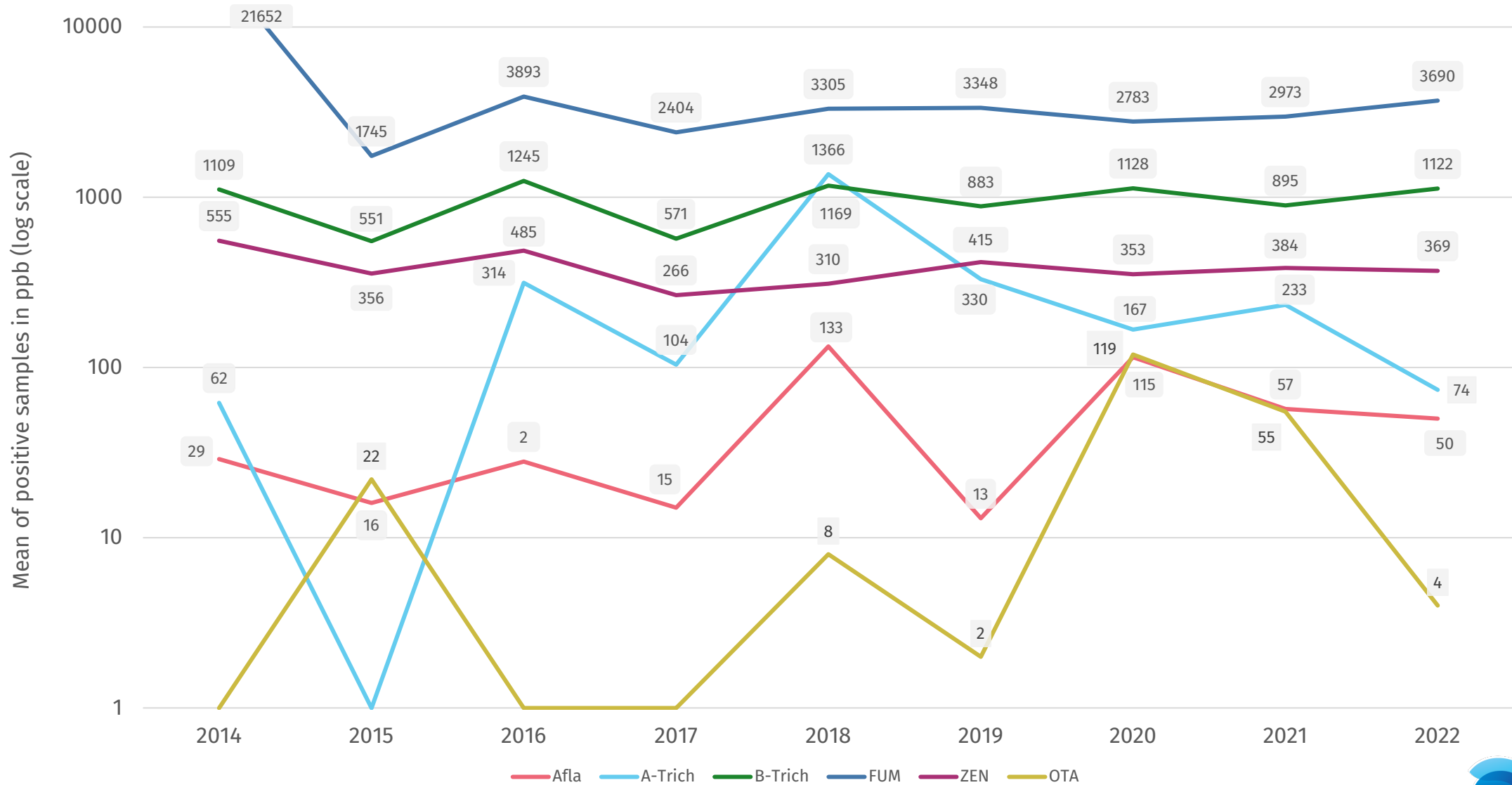
*Results are reported as the summation of mycotoxin levels detected per Mycotoxin Group. (For example, B-Trich represents total contamination detected for DON + AcDON + NIV + FusX)

2022 US Corn (as-fed basis)

Occurrence Trend in 2022 US Corn



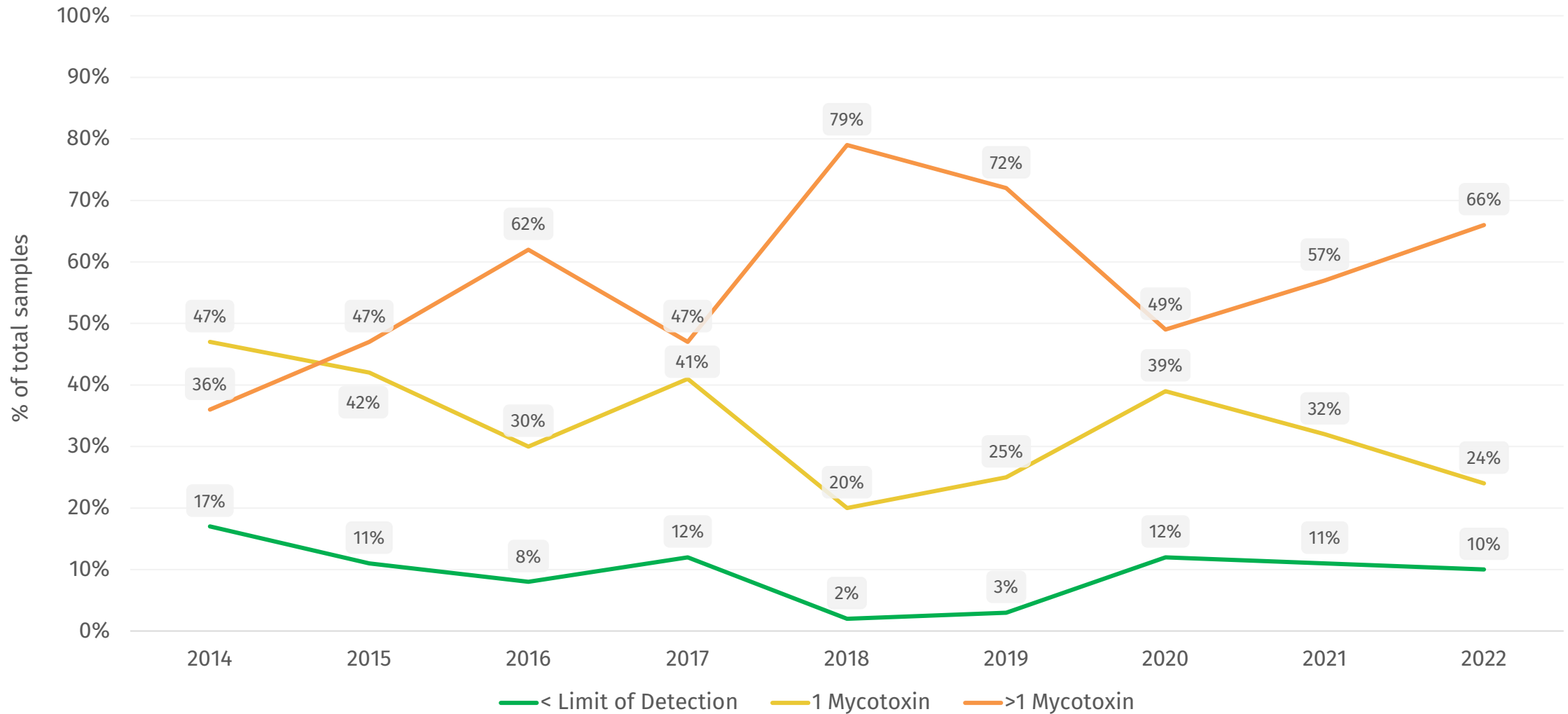
Mean of Positives Trend in 2022 US Corn



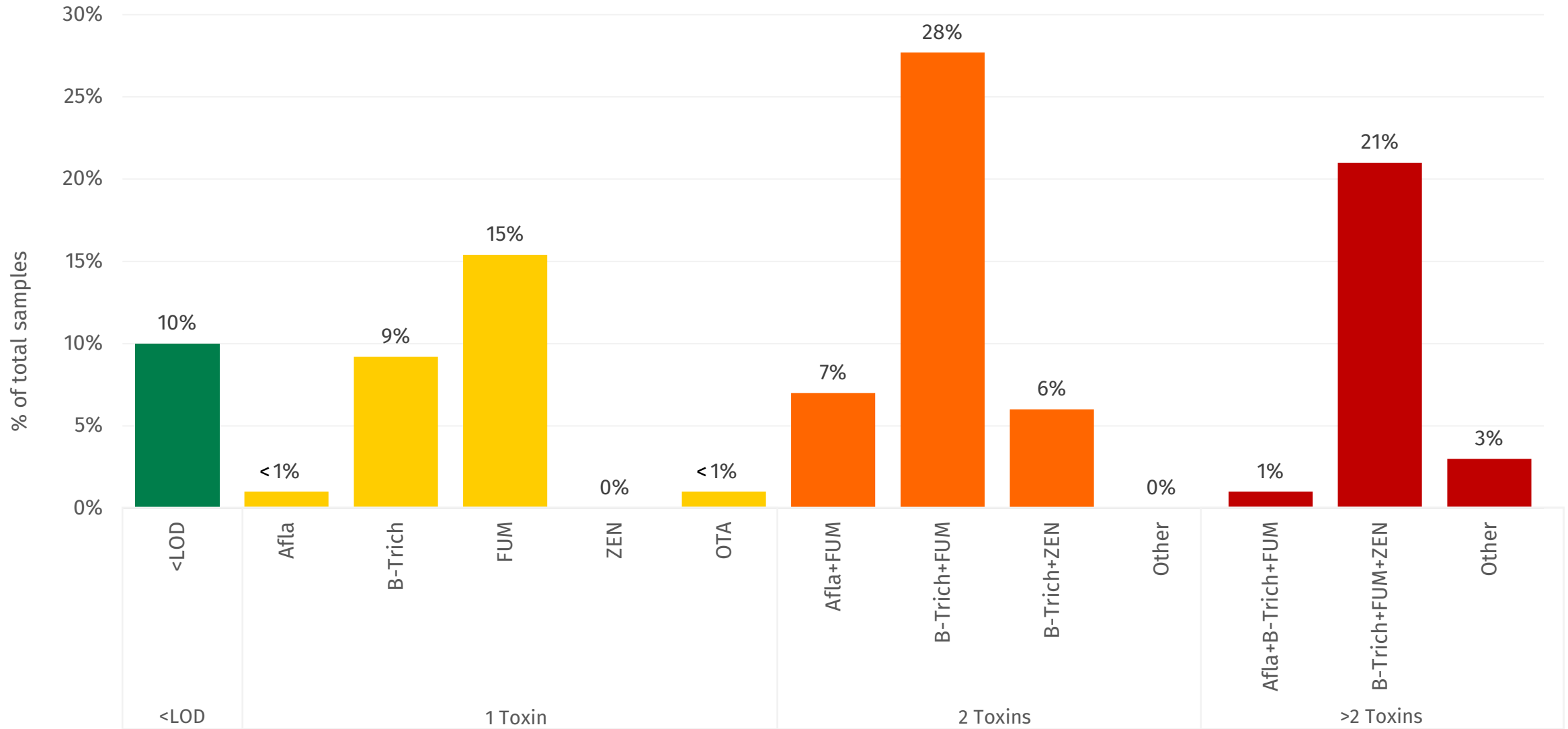
Based on the samples analyzed.



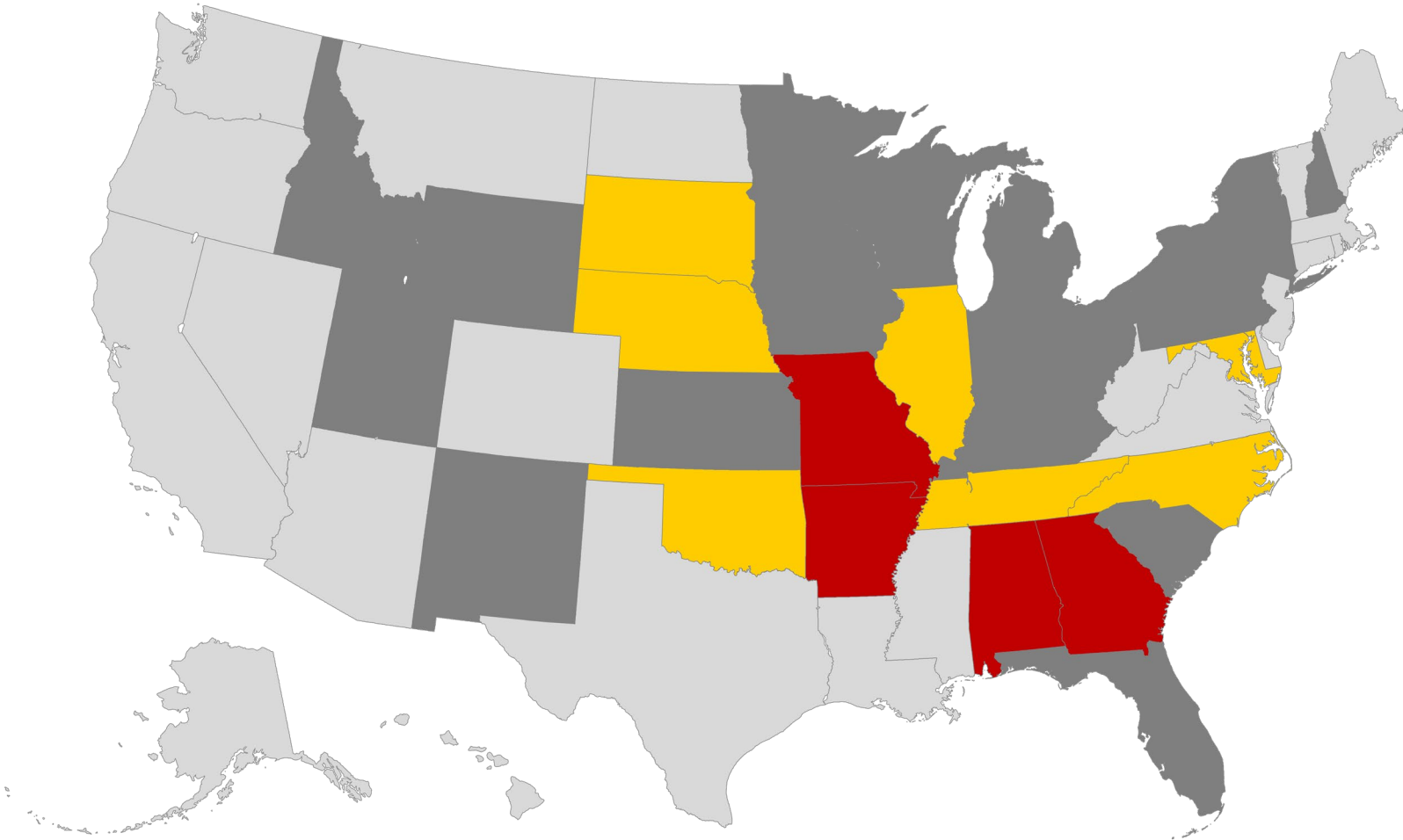
Co-occurrence Trend in 2022 US Corn



Co-occurrence Profile in 2022 US Corn



2022 Corn Risk by State – Afla



- State with average > 20 ppb
- State with average < 20 ppb
- State with samples < LOD (1 ppb)
- No sample submitted

8

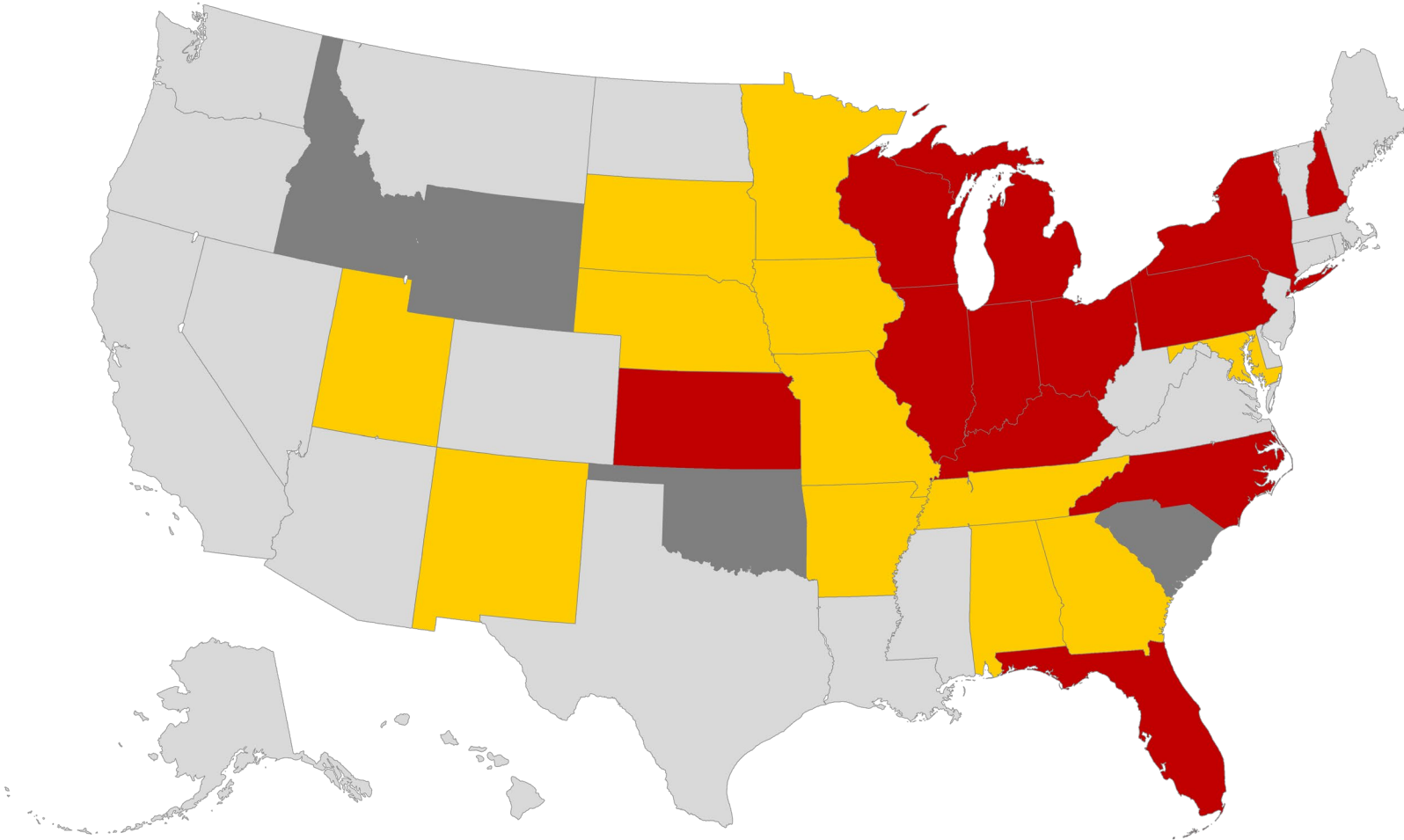
Powered by Bing
© GeoNames, Microsoft, TomTom

State	Number of Samples	% Positive Samples	Avg of Positive Samples
AR	4	25	602
AL	4	25	63
MO	18	11	58
GA	25	60	32
IL	22	9	17
TN	3	33	17
OK	1	100	9
NE	31	3	7
SD	15	7	5
MD	1	100	2
NC	4	25	2
FL	3	0	0
IA	27	0	0
ID	1	0	0
IN	19	0	0
KS	5	0	0
KY	2	0	0
MI	7	0	0
MN	23	0	0
NH	1	0	0
NM	2	0	0
NY	3	0	0
OH	30	0	0
PA	3	0	0
SC	3	0	0
UT	1	0	0
WI	24	0	0
WY	1	0	0

Based on the samples analyzed in this region.



2022 Corn Risk by State – B-Trich



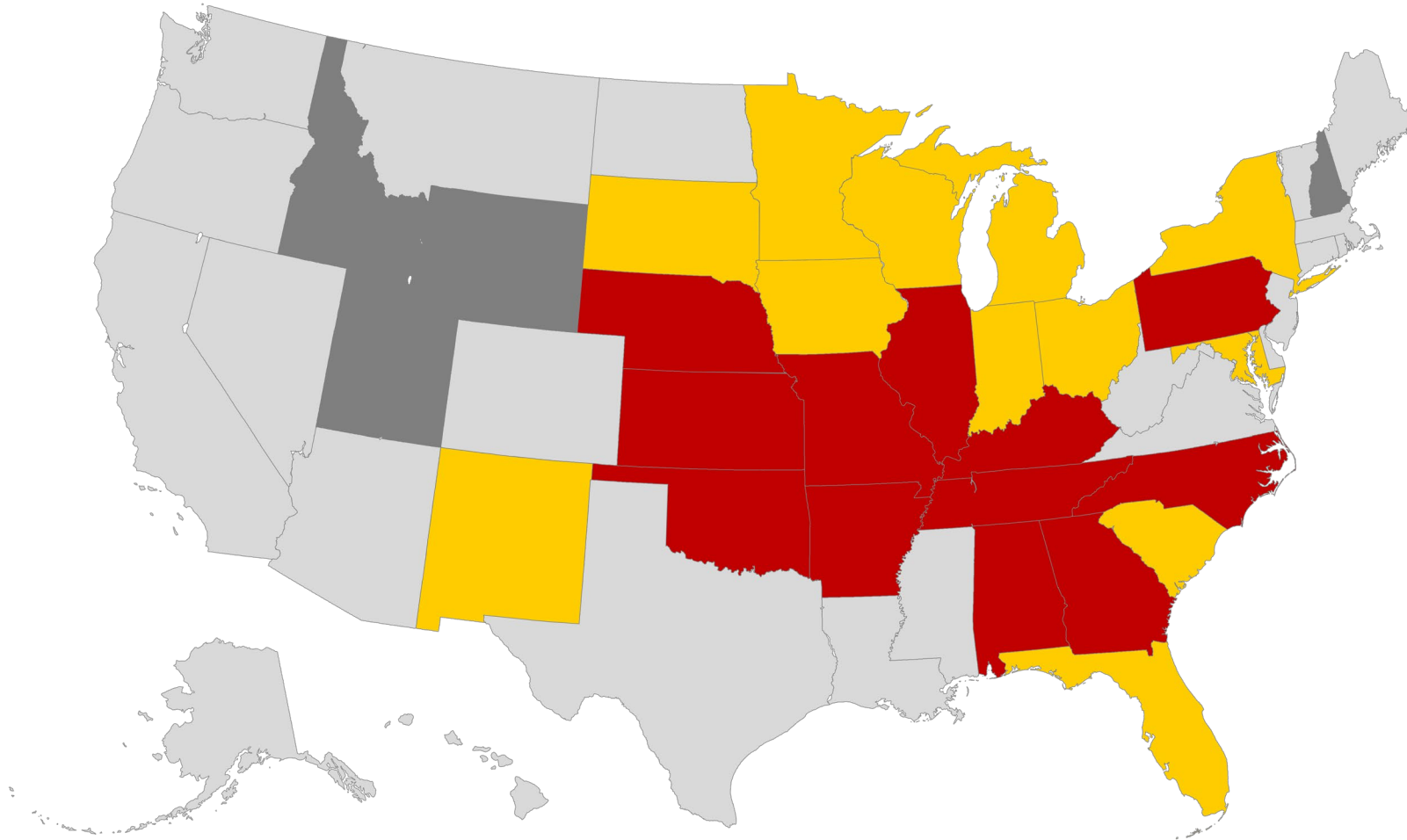
- State with average > 1000 ppb
- State with average < 1000 ppb
- State with samples < LOD (100 ppb)
- No sample submitted

Powered by Bing
© GeoNames, Microsoft, TomTom

State	Number of Samples	% Positive Samples	Avg of Positive Samples
NH	1	100	3384
OH	30	100	2315
PA	3	100	2084
NC	4	100	2035
KS	5	20	1626
NY	3	100	1455
FL	3	100	1445
MI	7	86	1366
WI	24	88	1359
IN	19	89	1208
IL	22	100	1186
KY	2	100	1175
MD	1	100	924
AL	4	75	803
TN	3	33	714
GA	25	44	490
NE	31	61	451
IA	27	67	275
MN	23	52	272
AR	4	25	266
NM	2	50	257
MO	18	39	252
SD	15	7	135
UT	1	100	119
ID	1	0	0
OK	1	0	0
SC	3	0	0
WY	1	0	0



2022 Corn Risk by State – FUM



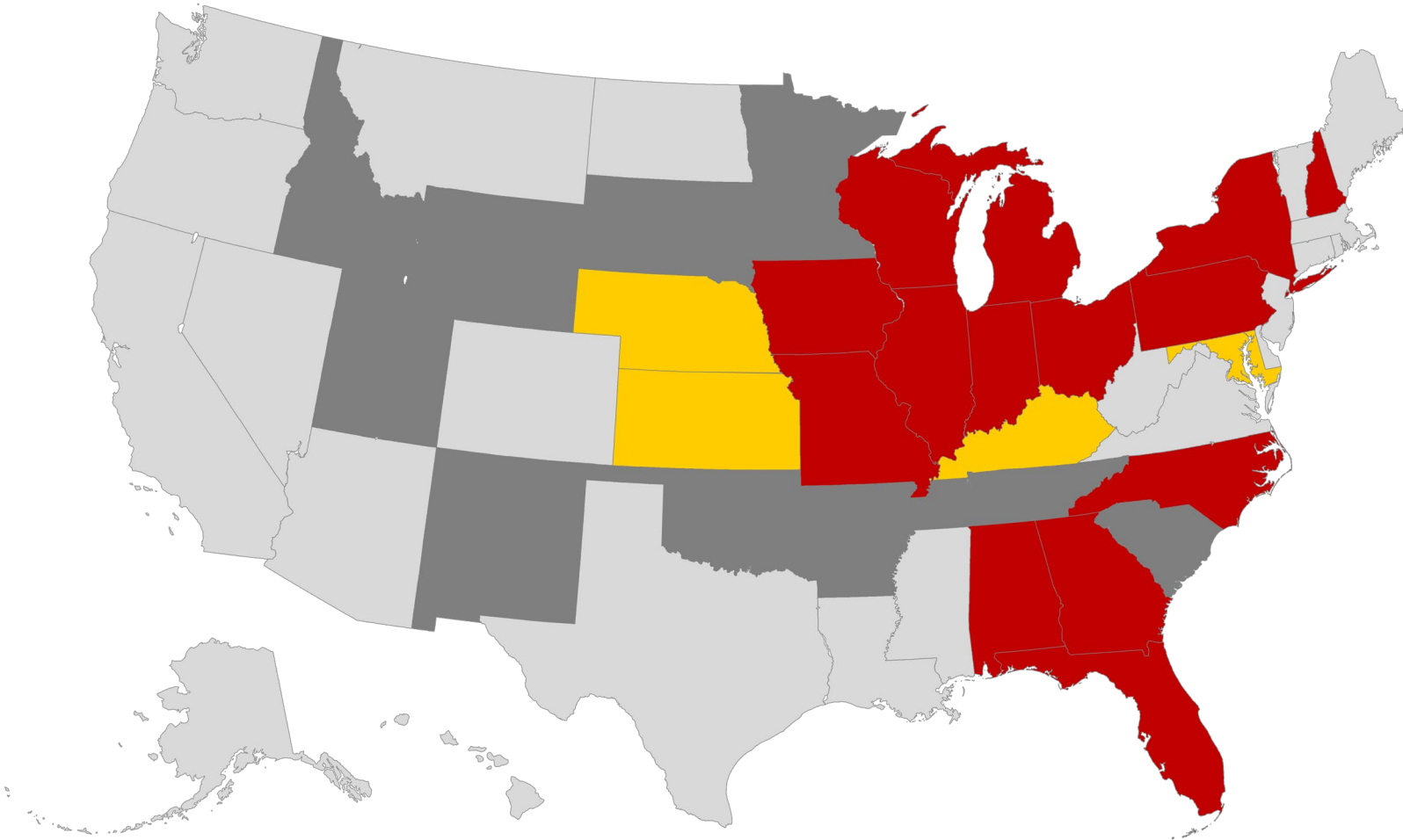
- State with average > 2000 ppb
- State with average < 2000 ppb
- State with samples < LOD (100 ppb)
- No sample submitted

Powered by Bing
© GeoNames, Microsoft, TomTom

State	Number of Samples	% Positive Samples	Avg of Positive Samples
KY	2	100	18300
TN	3	100	12033
MO	18	94	11547
AL	4	100	10675
IL	22	91	7565
NC	4	100	7325
OK	1	100	4700
GA	25	100	3948
PA	3	100	3700
AR	4	100	2750
NE	31	94	2683
KS	5	100	2560
NM	2	100	1650
IN	19	68	1531
SC	3	100	1367
FL	3	100	1167
IA	27	74	995
MI	7	100	871
MD	1	100	800
OH	30	60	729
NY	3	100	433
WI	24	58	429
MN	23	39	256
SD	15	27	225
ID	1	0	0
NH	1	0	0
UT	1	0	0
WY	1	0	0



2022 Corn Risk by State – ZEN



- State with average > 100 ppb
- State with average < 100 ppb
- State with samples < LOD (51.7 ppb)
- No sample submitted

Powered by Bing
© GeoNames, Microsoft, TomTom

State	Number of Samples	% Positive Samples	Avg of Positive Samples
IN	19	32	685
GA	25	20	600
IL	22	59	598
NH	1	100	514
NC	4	75	465
OH	30	60	405
MI	7	29	333
NY	3	100	275
AL	4	75	253
FL	3	100	215
MO	18	6	214
PA	3	33	206
IA	27	7	179
WI	24	67	169
KY	2	50	89
NE	31	13	79
KS	5	20	57
MD	1	100	53
AR	4	0	0
ID	1	0	0
MN	23	0	0
NM	2	0	0
OK	1	0	0
SC	3	0	0
SD	15	0	0
TN	3	0	0
UT	1	0	0
WY	1	0	0



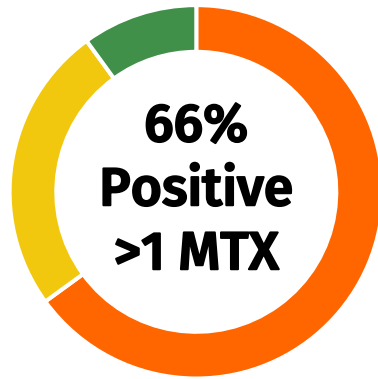
Mycotoxin Survey Summary – 2022 US Corn



283 corn samples submitted from 28 states



vs. 89% in 2021



vs. 57% in 2021

vs. 2021

B-Trich

- 67% positive / ↓ from 69%
- 1122 ppb / ↑ from 895 ppb

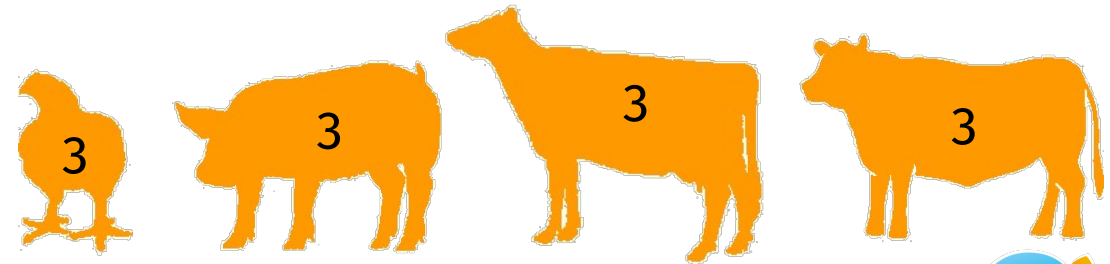
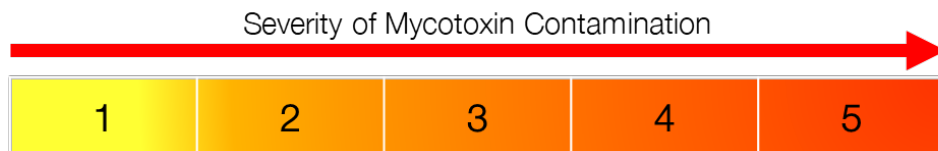
FUM

- 76% positive / ↑ from 64%
- 3690 ppb / ↑ from 2973 ppb

ZEN

- 30% positive / ↑ from 28%
- 369 ppb / ↓ from 384 ppb

Forecasted potential risk for livestock production*:



*Based on the samples analyzed.

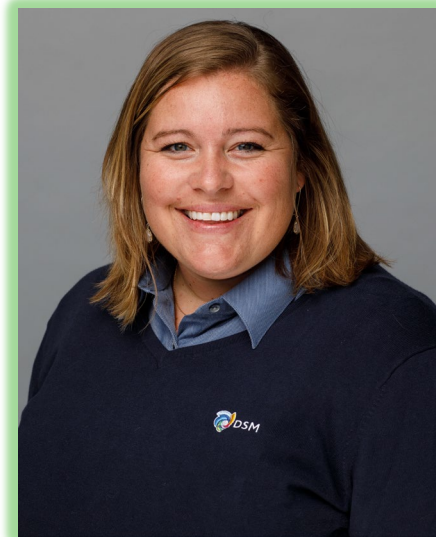


Questions?



Thank you!

Paige Gott, PhD
Mycotoxin & Hy-D Manager
paige.gott@dsm.com
+1-210-727-6533



Erin Schwandt, PhD
Ruminant Technical Manager
erin.schwandt@dsm.com
+1-785-473-3485

Lan Zheng, PhD
Swine Technical Manager
Lan.zheng-tugwell@dsm.com
+1-913-201-5166



Chasity Pender, PhD
Poultry Technical Manager
chasity.pender@dsm.com
+1-210-842-0178

BRIGHT SCIENCE. BRIGHTER LIVING.™

