Mycotoxin Monthly Survey
March 2024

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Mycotoxins & Analysis

LC-MS/MS

Romer Labs®

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

Mycotoxin Group	Mycotoxins	OLD Limit of Detection (LOD; ppb)	NEW! PLUS Method LOD (ppb)*	Limit of Quantitation (ppb)
Aflatoxins (Afla)	Aflatoxin B1	1.3	**0.2**	0.6
	Aflatoxin B2	1.2	**0.2**	0.6
	Aflatoxin G1	1.1	**0.2**	0.6
	Aflatoxin G2	1.6	**0.2**	0.6
A-Trichothecenes (A-Trich)	T-2 Toxin	100.0	**5**	15
	HT-2 Toxin	100.0	**5**	15
	Neosolaniol	100.0	**5**	15
	Diacetoxyscirpenol (DAS)	100.0	**5**	15
B-Trichothecenes (B-Trich)	Deoxynivalenol (DON/Vomitoxin)	100.0	**105**	350
	3-Acetyl-deoxynivalenol (3-AcDON)	100.0	**105**	350
	15-Acetyl-deoxynivalenol (15-AcDON)		**105**	350
	Nivalenol (NIV)	100.0	**105**	350
	Fusarenon X (FusX)	100.0	**105**	350
Fumonisins (FUM)	Fumonisin B1	100.0	**50**	160
	Fumonisin B2	100.0	**50**	160
	Fumonisin B3	100.0	**50**	160
Zearalenone (ZEN)	Zearalenone	51.7	**1**	5
Ochratoxin A (OTA)	Ochratoxin A	1.1	**0.4**	1.2

*As of August 1, 2023, Romer Labs implemented the updated PLUS Method featuring enhanced sensitivity through lowered limits of detection (LOD) for most metabolites. Changes in laboratory methods may influence historical comparisons vs. 2023 survey results.
**Results are reported as the summation of mycotoxin levels detected per Mycotoxin Group. For example, B-Trich represents total contamination detected for DON + 3-AcDON + 15-AcDON + NIV + FusX.

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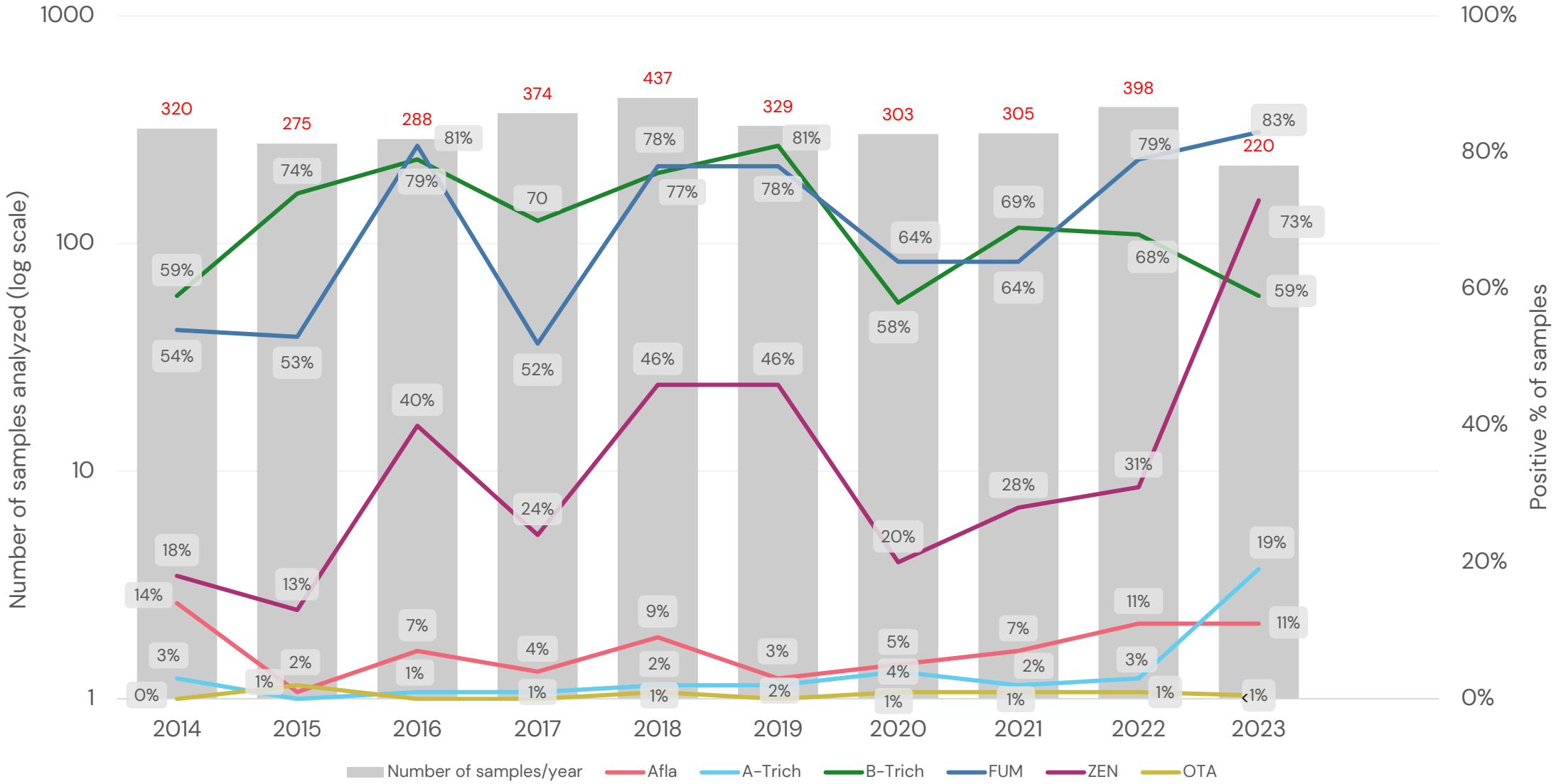
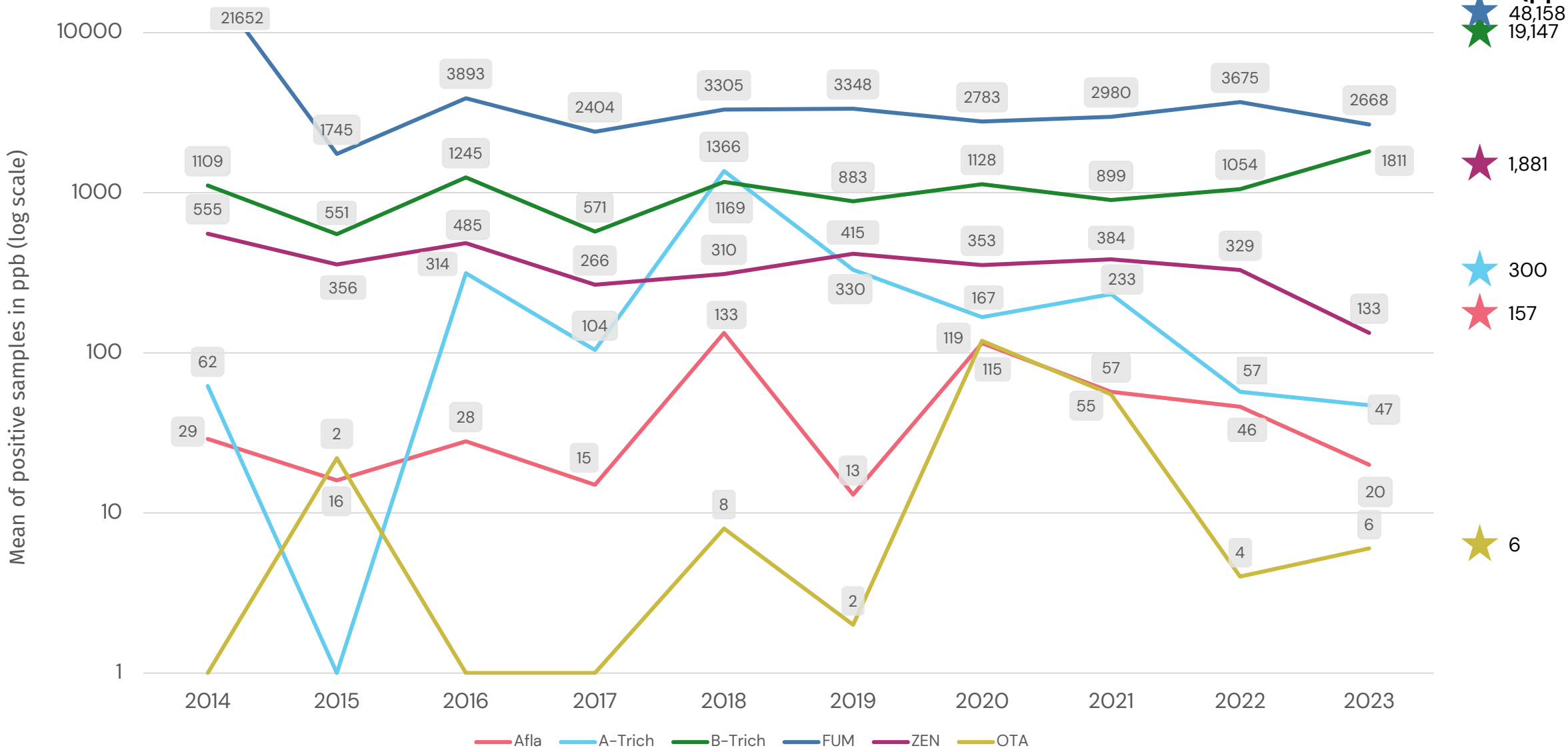
Occurrence Trend in 2023 US Corn



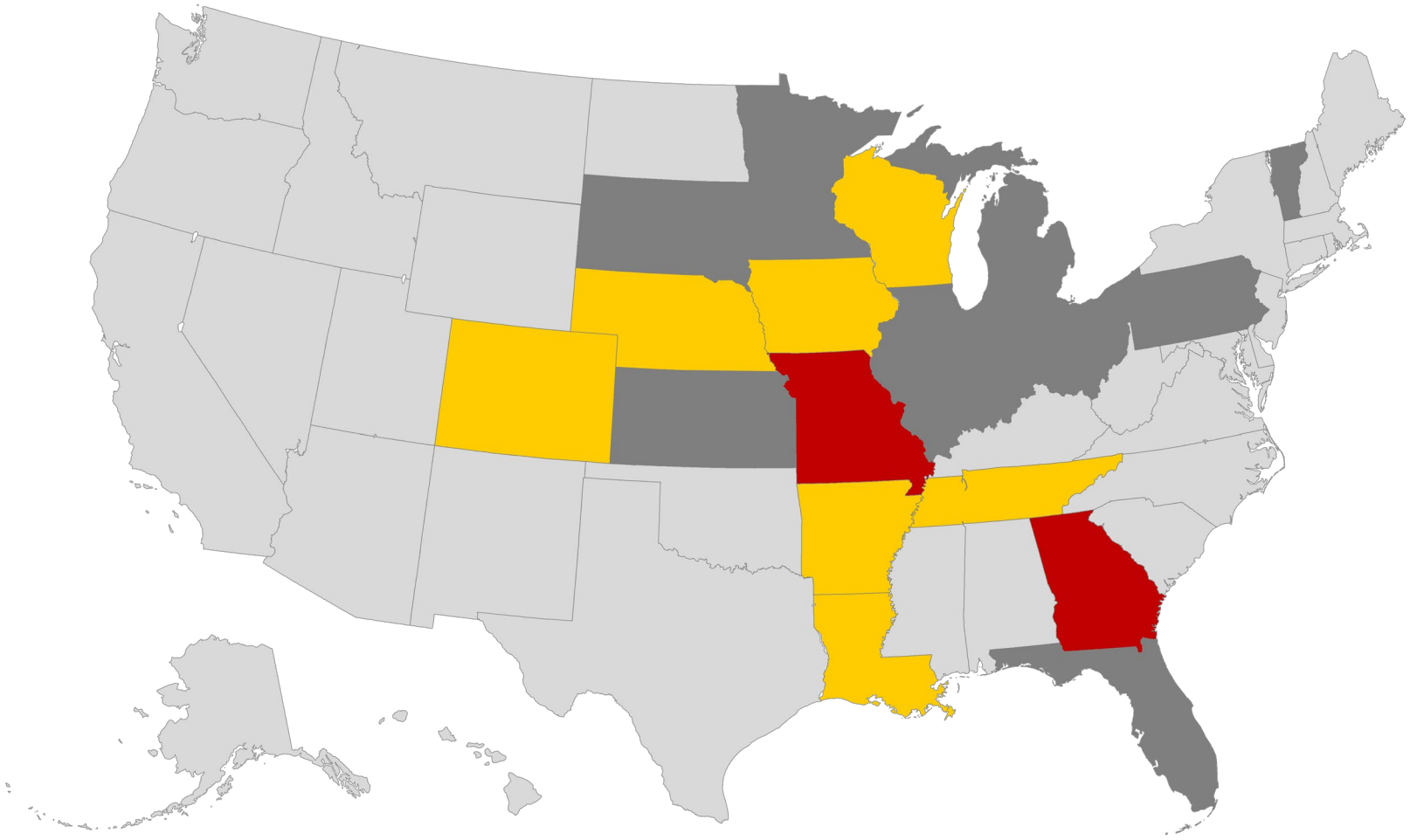
Based on the samples analyzed in this region.
Changes in laboratory methods including lowered limits of detection (LOD) may influence historical comparisons vs. 2023 survey results.

Mean of Positives Trend in 2023 US Corn



Based on the samples analyzed in this region.
Changes in laboratory methods including lowered limits of detection (LOD) may influence historical comparisons vs. 2023 survey results.

2023 Corn Risk by State – Aflatoxins

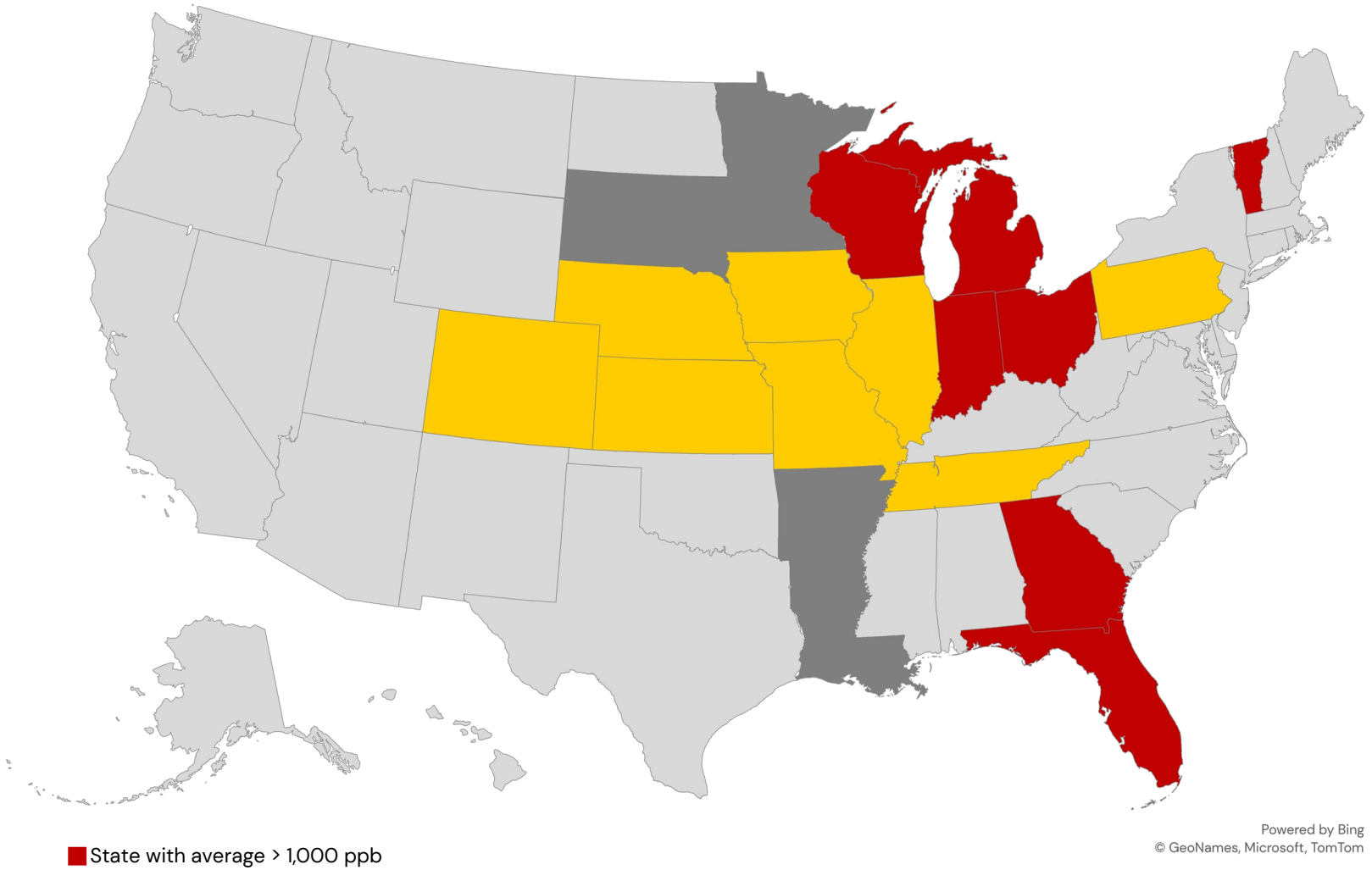


State with average > 20 ppb
State with average < 20 ppb
State with samples < LOD (0.2 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
GA	2	50	48
MO	39	26	34
AR	22	23	18
LA	6	33	14
IA	20	5	1
CO	10	30	0.3
NE	33	3	0.3
TN	5	20	0.3
WI	24	4	0.3
FL	3	0	0
IL	7	0	0
IN	12	0	0
KS	3	0	0
MI	4	0	0
MN	3	0	0
OH	22	0	0
PA	2	0	0
SD	2	0	0
VT	1	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State – Type B Trichothecenes

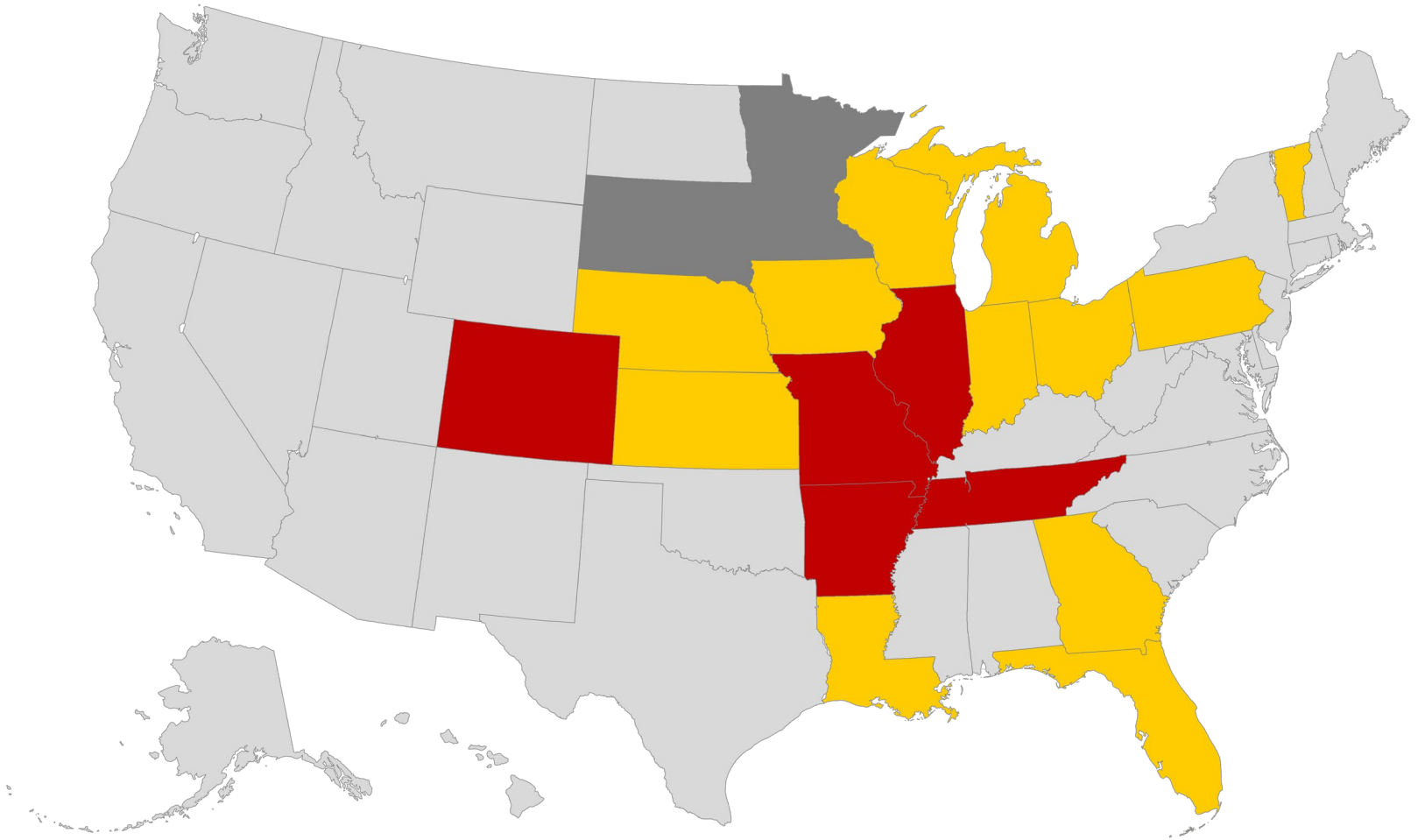


State with average > 1,000 ppb
State with average < 1,000 ppb
State with samples < LOD (105.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
OH	22	100	5937
FL	3	100	4950
MI	4	100	2841
IN	12	100	2305
VT	1	100	2189
GA	2	50	1204
WI	24	96	1120
IL	7	71	887
PA	2	100	694
MO	39	38	410
CO	10	100	298
NE	33	64	231
IA	20	30	175
KS	3	33	175
TN	5	80	175
AR	22	0	0
LA	6	0	0
MN	3	0	0
SD	2	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State - Fumonisins

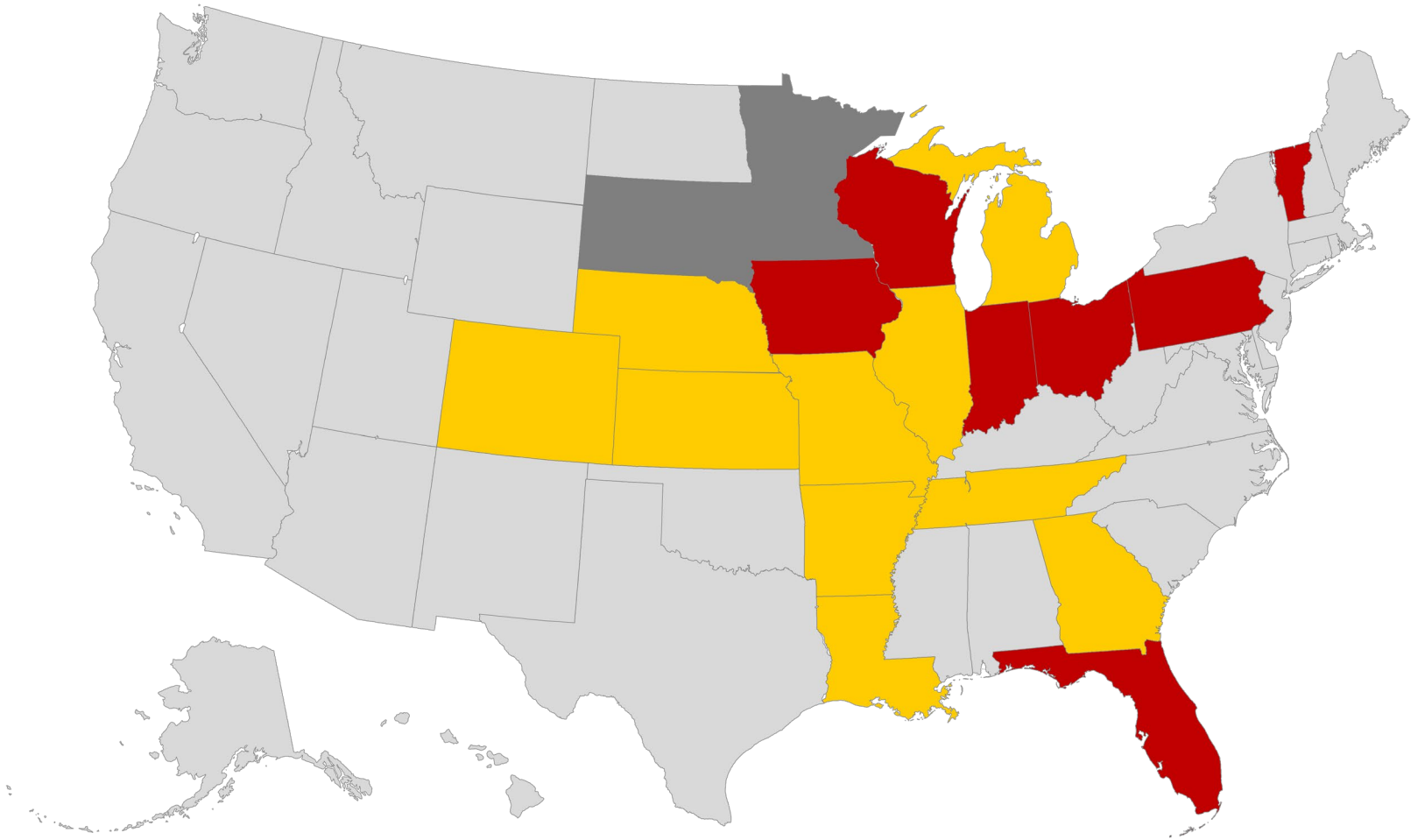


State with average > 2,000 ppb
State with average < 2,000 ppb
State with samples < LOD (50.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
CO	10	100	9252
MO	39	97	5309
TN	5	100	3656
AR	22	91	3483
IL	7	100	2422
LA	6	100	1577
IA	20	55	1483
GA	2	100	1285
KS	3	100	1032
NE	33	100	1015
VT	1	100	698
IN	12	83	678
OH	22	55	666
MI	4	50	298
WI	24	75	258
FL	3	100	232
PA	2	50	80
MN	3	0	0
SD	2	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State – Zearalenone



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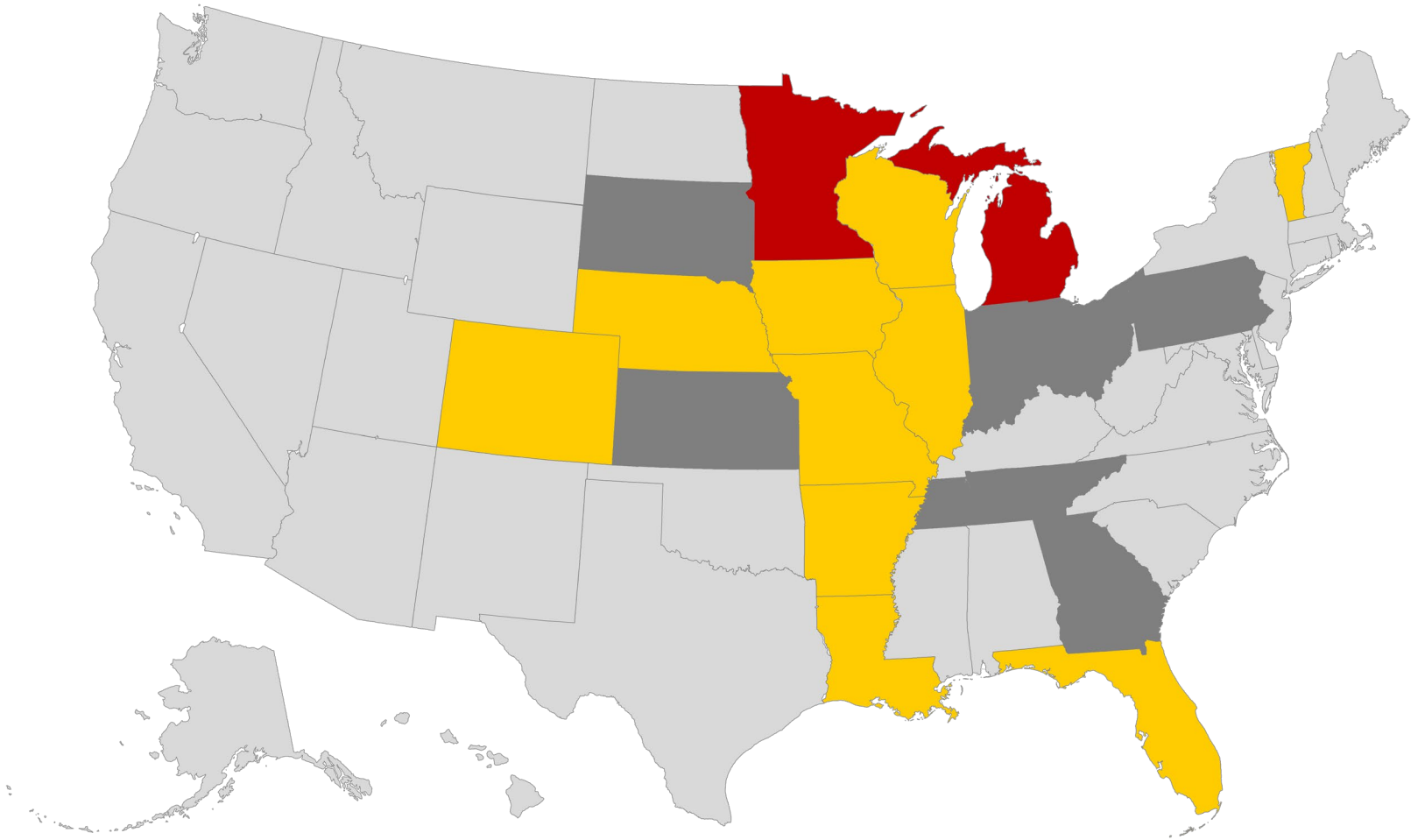
State with average > 100 ppb
State with average < 100 ppb
State with samples < LOD (1.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
VT	1	100	951
PA	2	100	662
OH	22	100	450
FL	3	100	392
IN	12	92	200
IA	20	50	122
WI	24	100	107
MI	4	100	77
IL	7	100	30
MO	39	59	26
KS	3	100	24
NE	33	76	21
TN	5	100	16
GA	2	100	14
AR	22	9	3
CO	10	100	3
LA	6	100	3
MN	3	0	0
SD	2	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State – Type A Trichothecenes

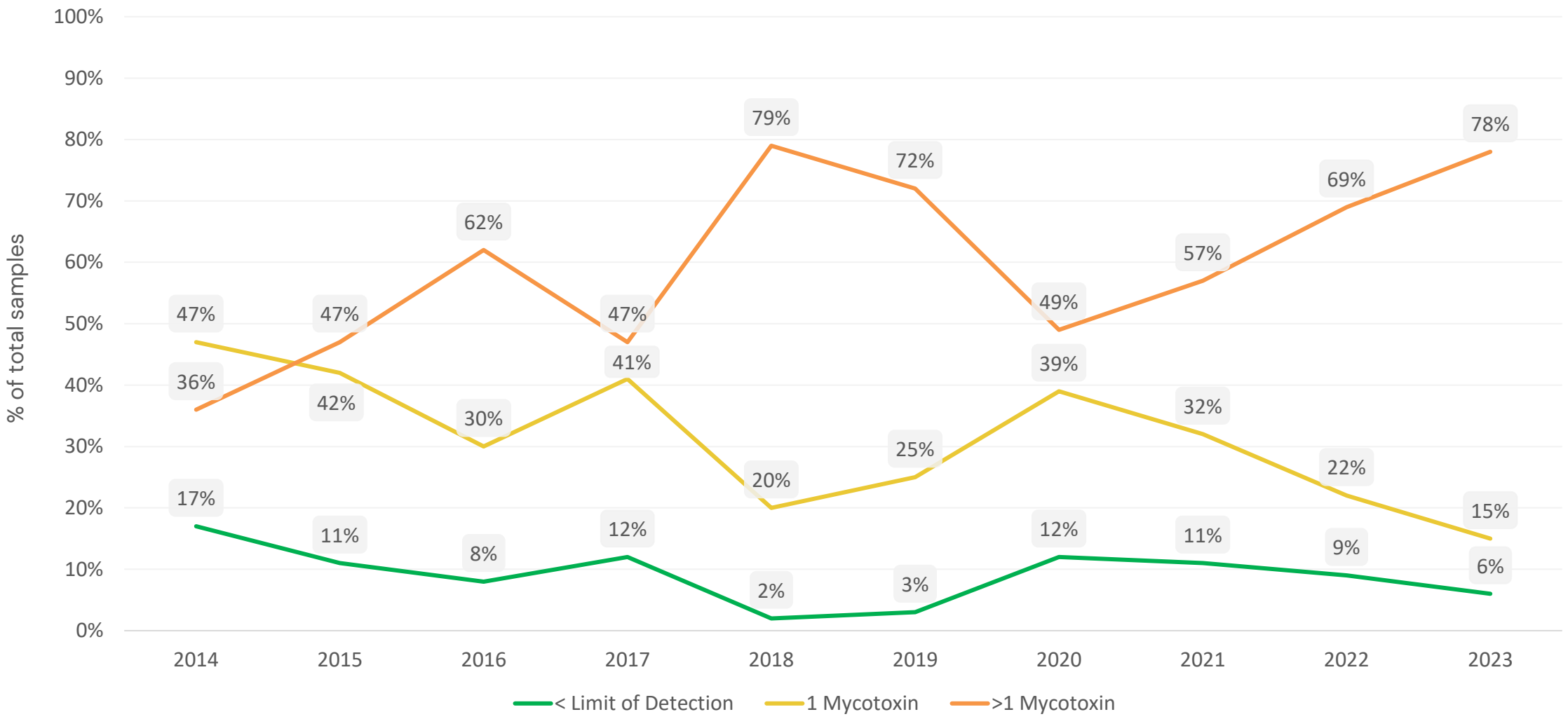


State with average > 100 ppb
State with average < 100 ppb
State with samples < LOD (5.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
MN	3	33	192
MI	4	25	139
IA	20	20	88
WI	24	79	47
VT	1	100	41
AR	22	14	36
MO	39	21	27
FL	3	33	24
CO	10	10	8
IL	7	14	8
LA	6	17	8
NE	33	3	8
GA	2	0	0
IN	12	0	0
KS	3	0	0
OH	22	0	0
PA	2	0	0
SD	2	0	0
TN	5	0	0

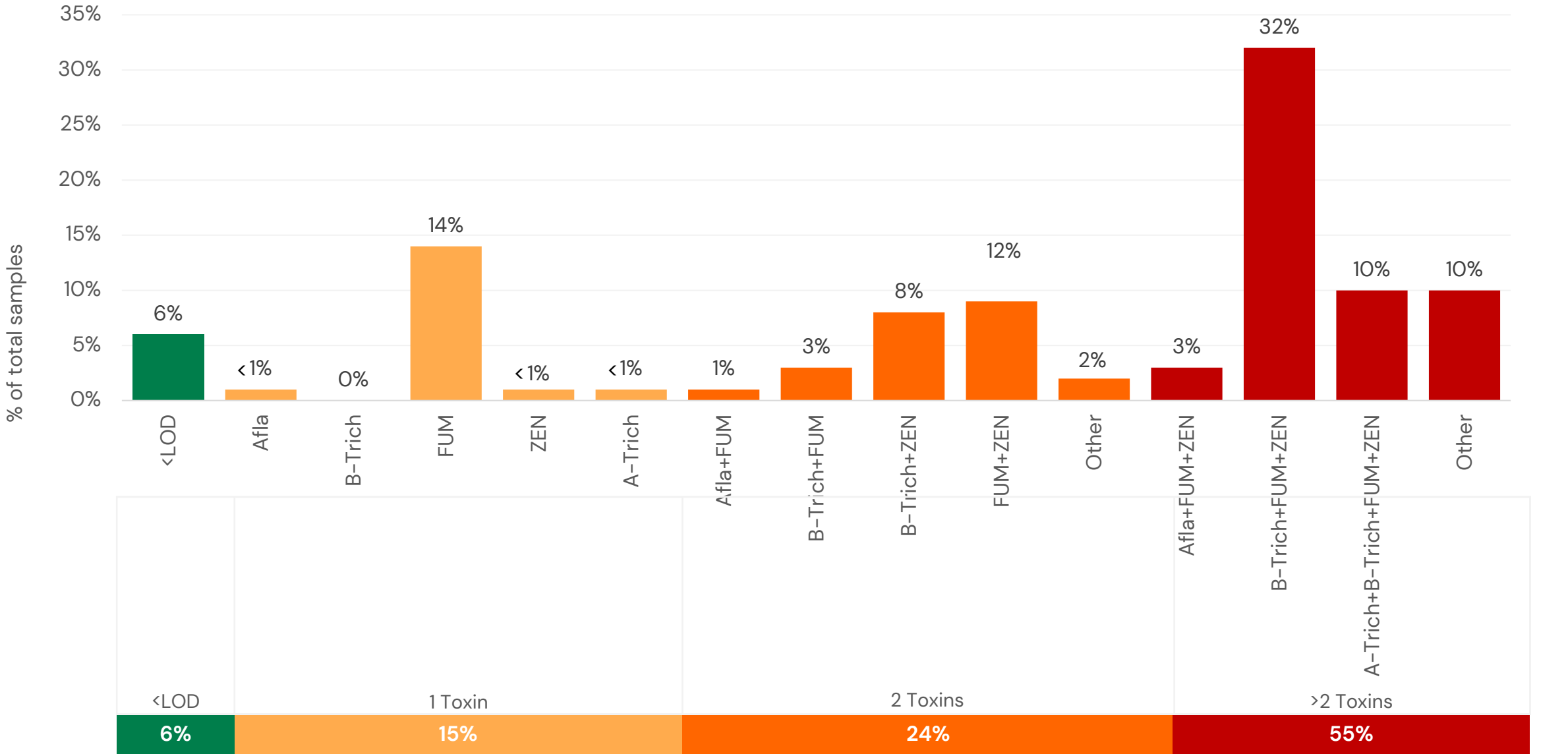
Based on the samples analyzed in this region.

Co-occurrence Trend in 2023 US Corn



Based on the samples analyzed in this region. Values may not total 100% due to rounding.
Changes in laboratory methods including lowered limits of detection (LOD) may influence historical comparisons vs. 2023 survey results.

Co-occurrence Profile in 2023 US Corn



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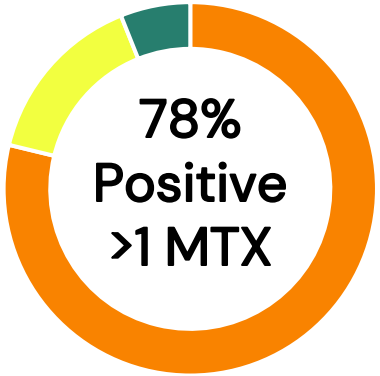
Based on the samples analyzed. Values may not total 100% due to rounding.

Mycotoxin Survey Summary – 2023 US Corn

220 corn samples submitted from 19 states

vs. 92% in 2022



vs. 69% in 2022

vs. 2022

B-Trich	• 59% positive / ↓ from 68% • 1811 ppb / ↑ from 1054 ppb
FUM	• 83% positive / ↑ from 79% • 2668 ppb / ↓ from 3675 ppb
ZEN	• 73% positive / ↑ from 31% • 133 ppb / ↓ from 329 ppb

- Changes in laboratory methods including lowered limits of detection (LOD) may influence historical comparisons vs. 2023 survey results.
  - Romer Labs PLUS Method was implemented August 2023 featuring enhanced sensitivity for most metabolites
    - Increased occurrence
    - Lower means
      - Greatest impacts observed so far:
        - ZEN
        - A-Trich
- Continued monitoring and surveillance of new crop ingredients is warranted

Based on the samples analyzed in this region.

Changes in laboratory methods including lowered limits of detection (LOD) may influence historical comparisons vs. 2023 survey results.

Questions?

Thank you!

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