Mycotoxin Monthly Survey
February 2024

dsm-firmenich

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 (ZEN)	51.7	**1**	5
Ochratoxin A (OTA)	Ochratoxin A (OTA)	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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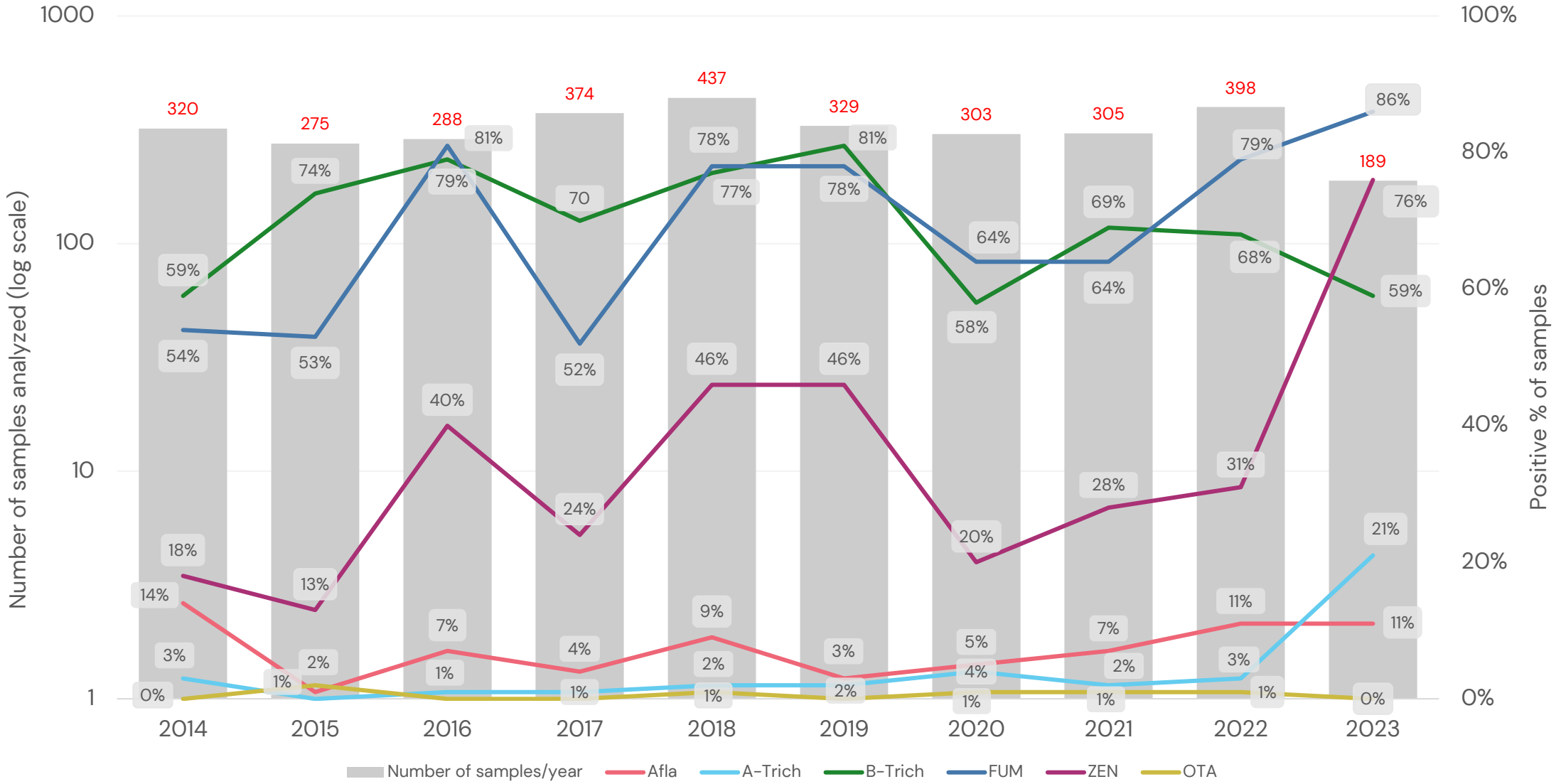
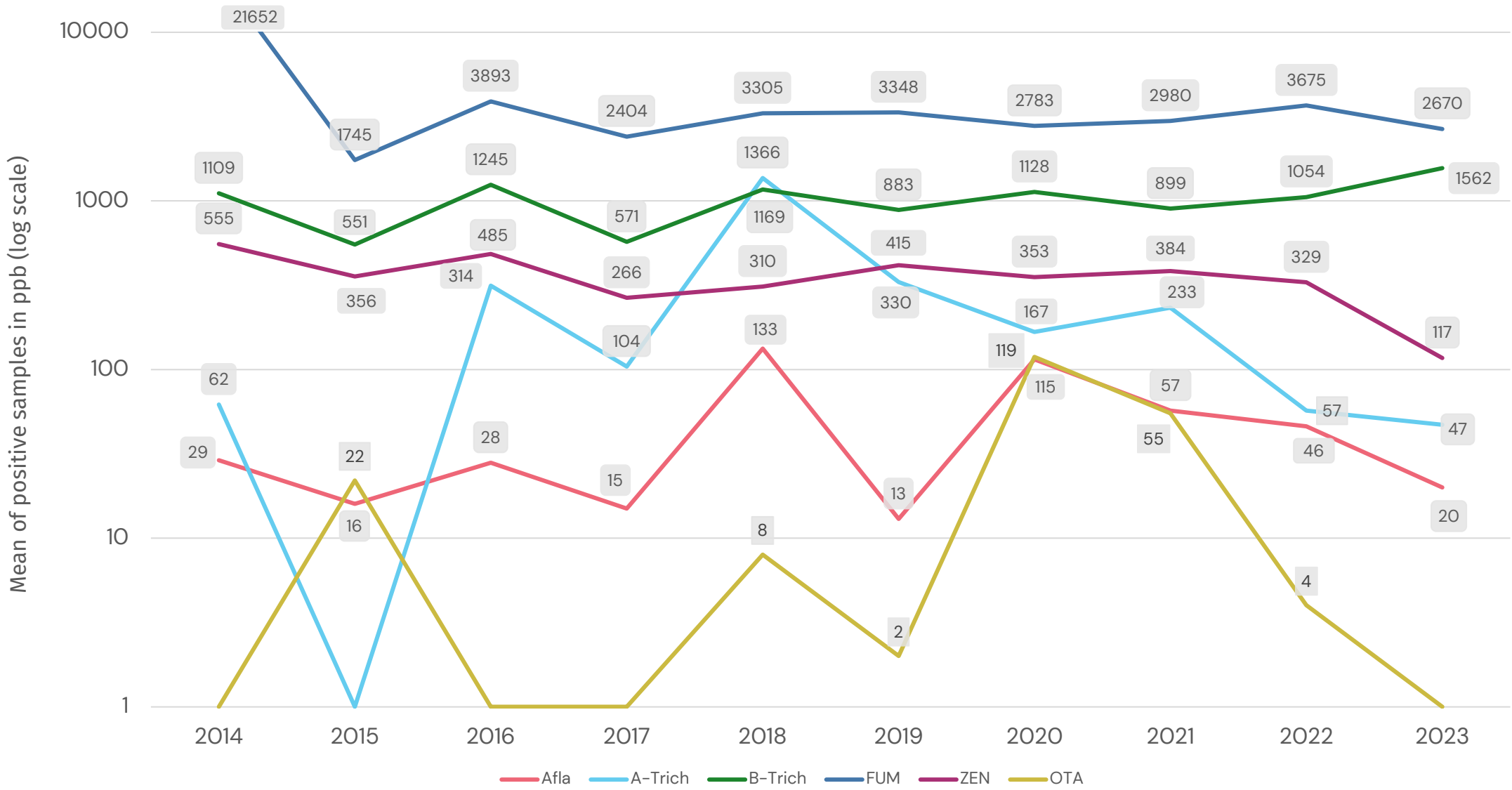
Occurrence Trend in 2023 US Corn



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



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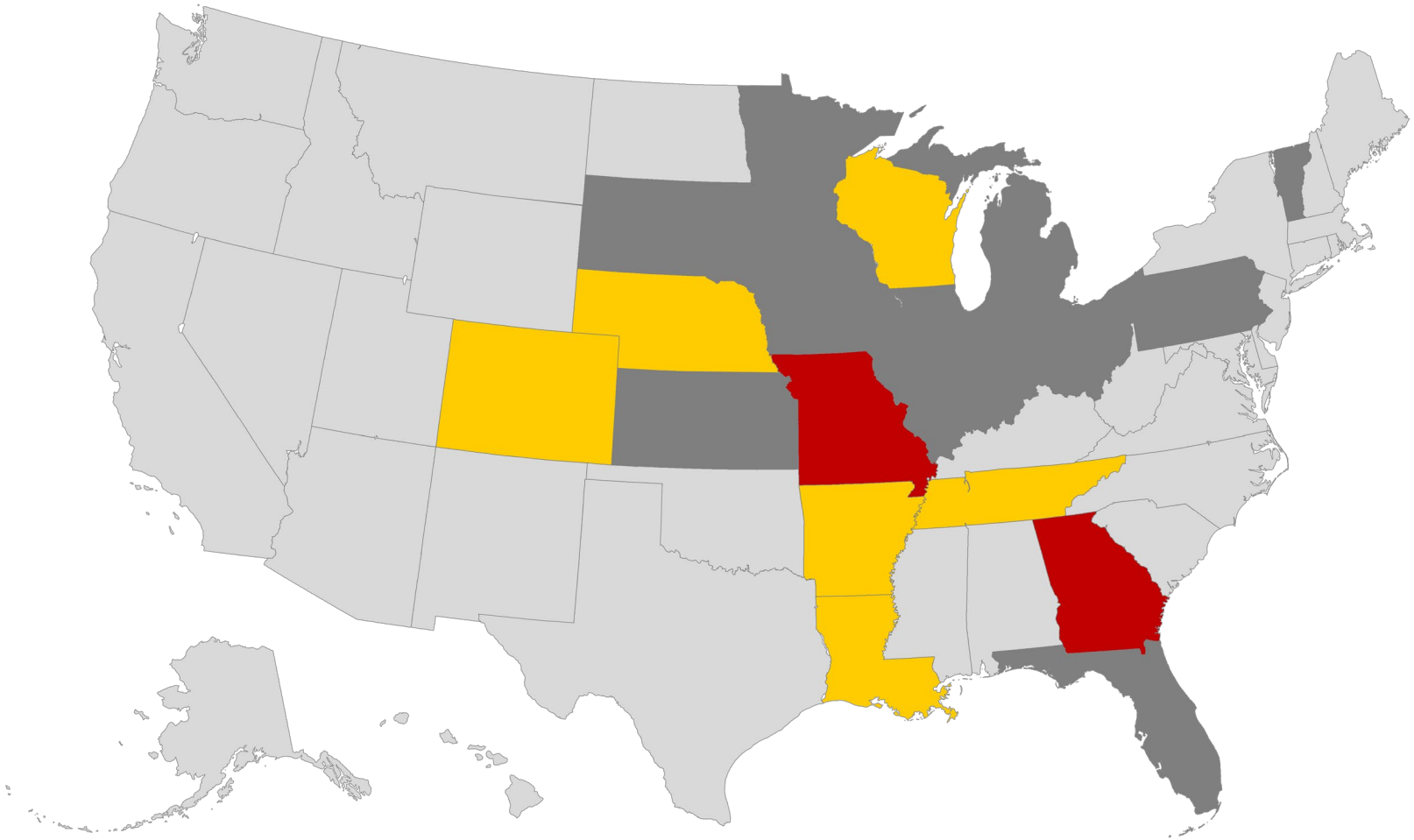
Based on the samples analyzed in this region.
Changes in laboratory methods including lowered limits of detection (LOD) may influence historical comparisons vs. 2023 survey results.

2023 Corn Risk by State - Aflatoxins



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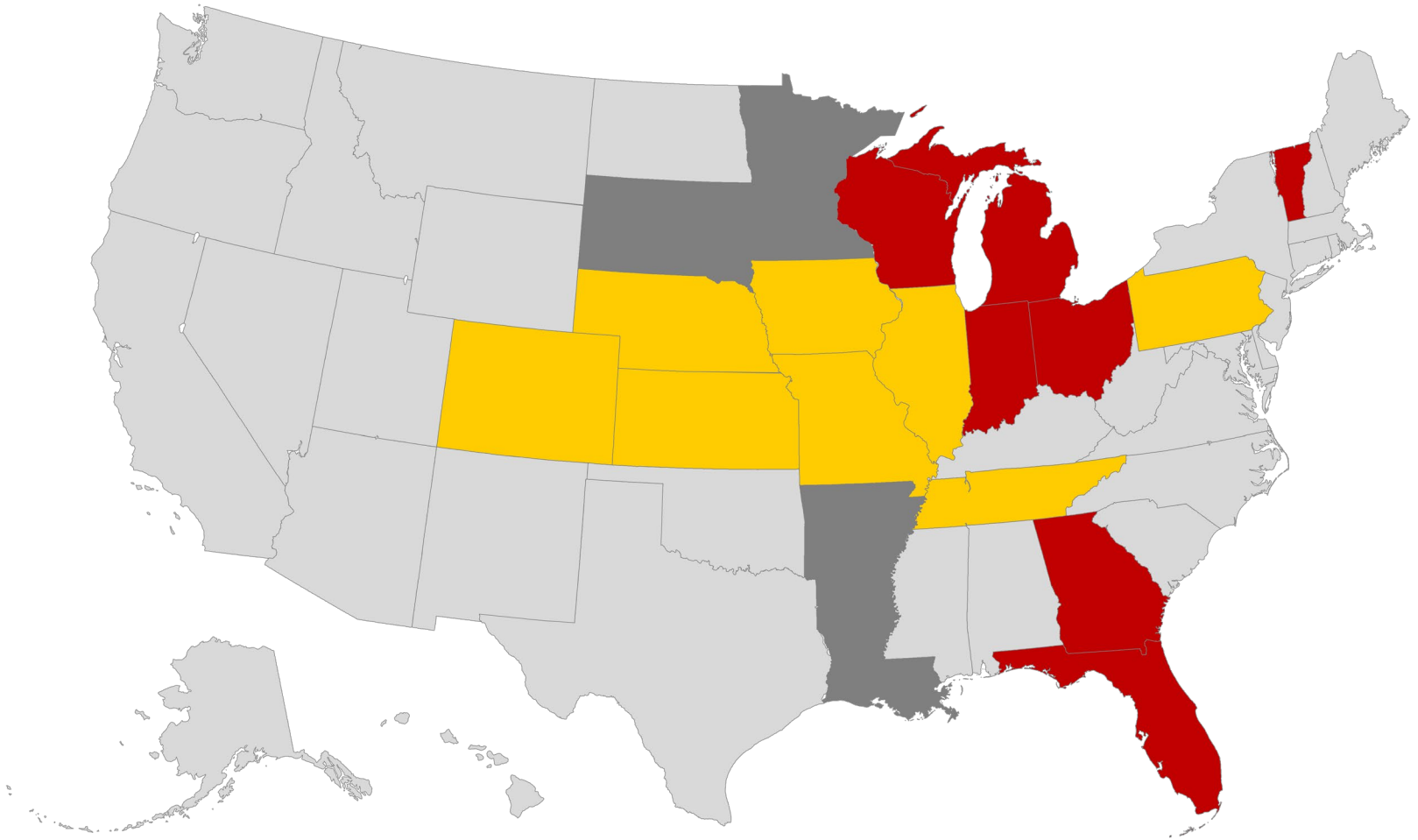
State with average > 20 ppb
State with average < 20 ppb
State with samples < LOD (0.2 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
GA	2	50	48
MO	35	26	35
LA	6	33	14
AR	16	19	11
CO	10	30	0.3
NE	33	3	0.3
TN	5	20	0.3
WI	23	4	0.3
FL	3	0	0
IA	13	0	0
IL	4	0	0
IN	9	0	0
KS	3	0	0
MI	4	0	0
MN	3	0	0
OH	16	0	0
PA	2	0	0
SD	1	0	0
VT	1	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State – Type B Trichothecenes



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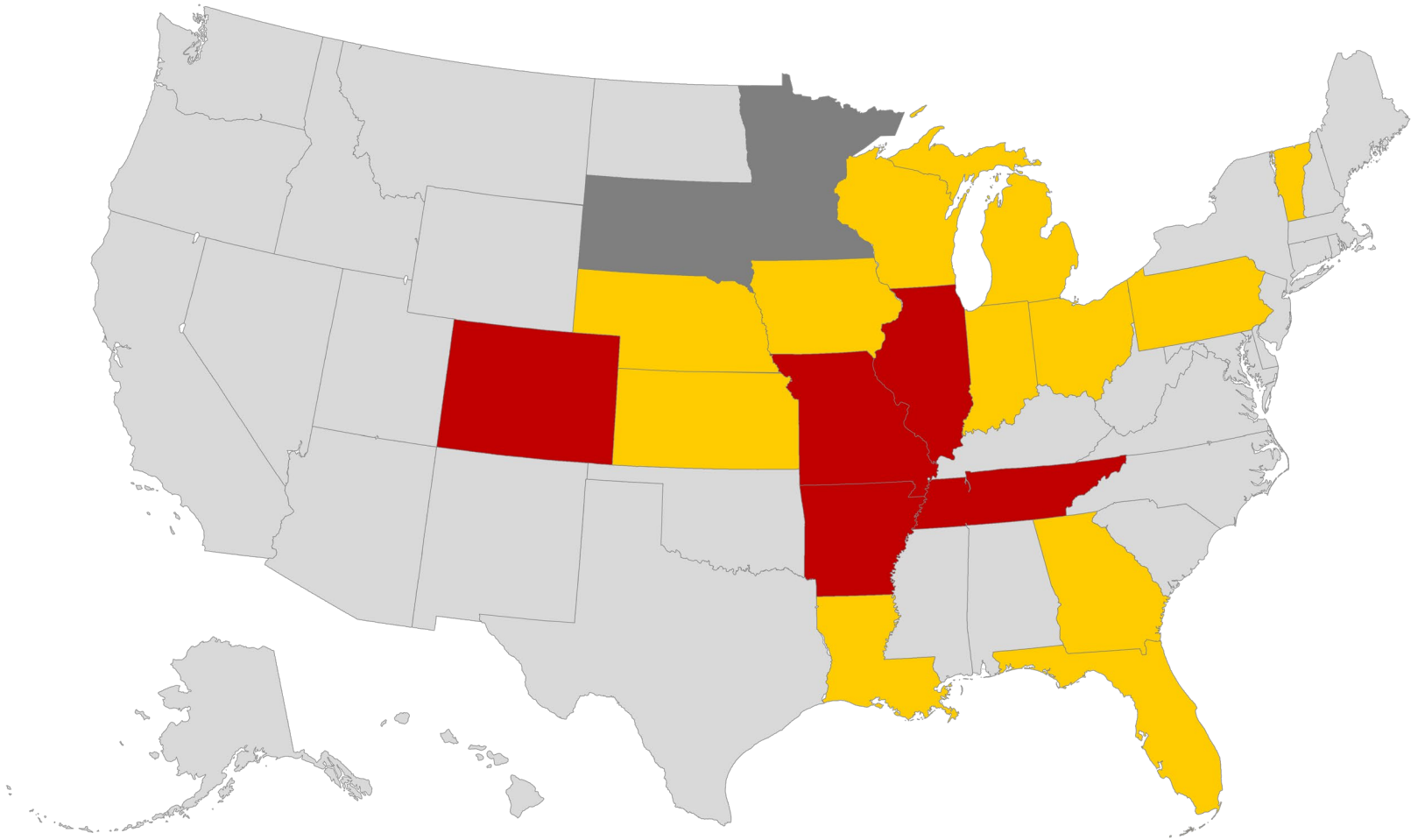
State with average > 1,000 ppb
State with average < 1,000 ppb
State with samples < LOD (105.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
OH	16	100	5103
FL	3	100	4950
MI	4	100	2841
IN	9	100	2548
VT	1	100	2189
GA	2	50	1204
WI	23	96	1002
IL	4	50	986
PA	2	100	694
MO	35	34	381
CO	10	100	298
NE	33	64	231
IA	13	23	175
KS	3	33	175
TN	5	80	175
AR	16	0	0
LA	6	0	0
MN	3	0	0
SD	1	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State - Fumonisins

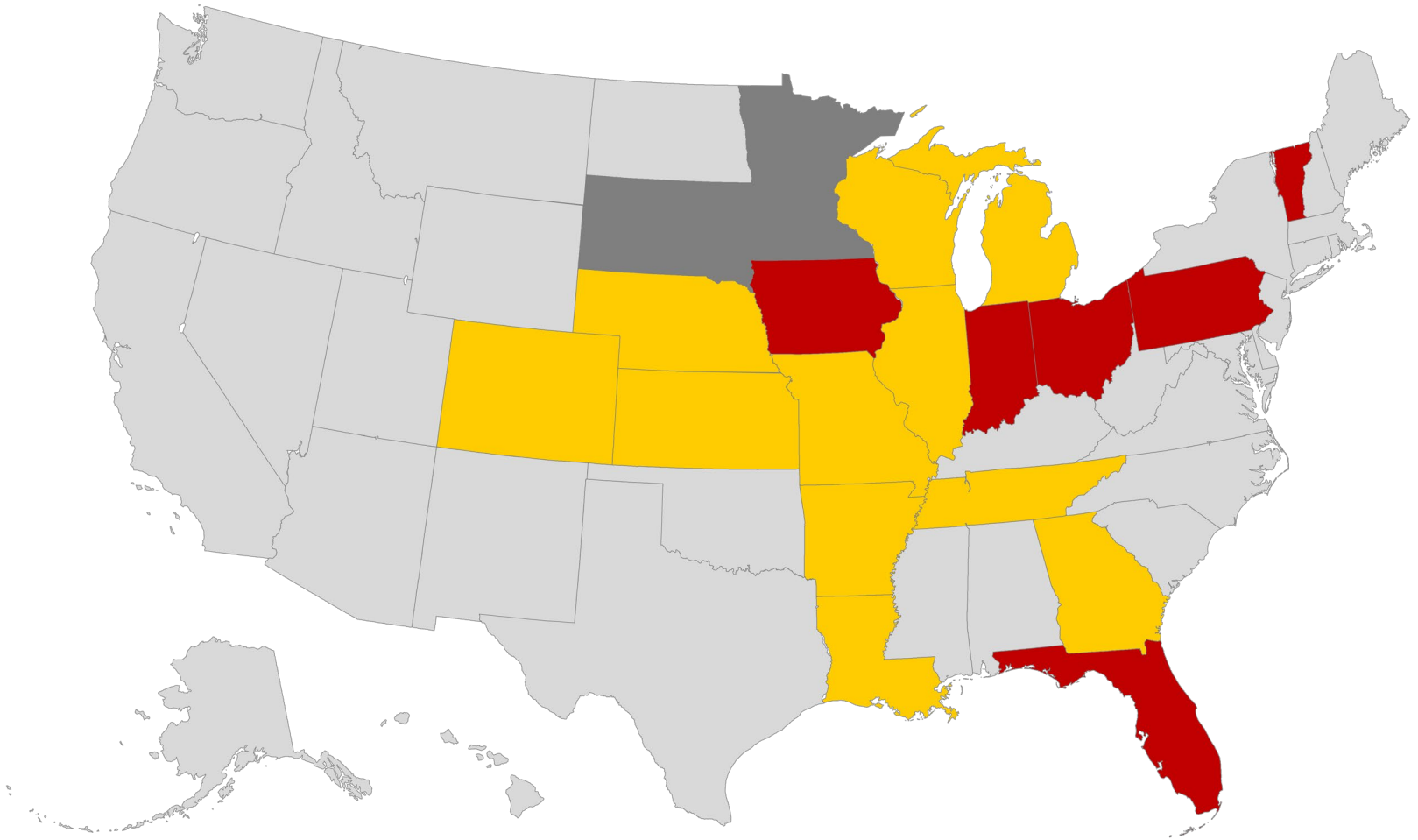


State with average > 2,000 ppb
State with average < 2,000 ppb
State with samples < LOD (50.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
CO	10	100	9252
MO	35	97	5356
TN	5	100	3656
IL	4	100	3650
AR	16	88	3040
IA	13	62	1905
LA	6	100	1577
GA	2	100	1285
KS	3	100	1032
NE	33	100	1015
OH	16	63	781
VT	1	100	698
IN	9	89	517
MI	4	50	298
WI	23	78	258
FL	3	100	232
PA	2	50	80
MN	3	0	0
SD	1	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State – Zearalenone



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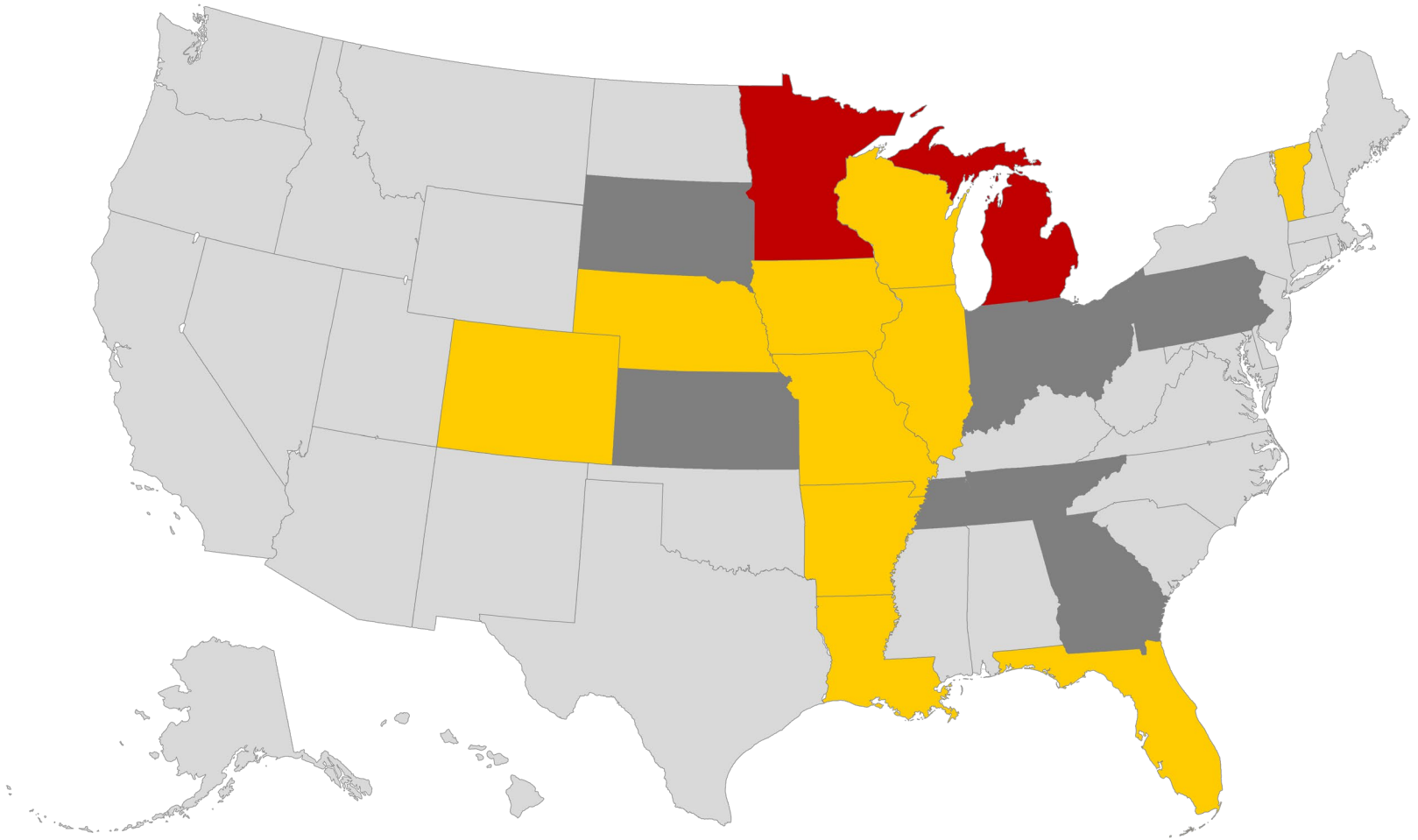
State with average > 100 ppb
State with average < 100 ppb
State with samples < LOD (1.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
VT	1	100	951
PA	2	100	662
OH	16	100	440
FL	3	100	392
IN	9	100	232
IA	13	54	169
MI	4	100	77
WI	23	100	56
KS	3	100	24
MO	35	63	22
NE	33	76	21
IL	4	100	20
TN	5	100	16
GA	2	100	14
AR	16	6	3
CO	10	100	3
LA	6	100	3
MN	3	0	0
SD	1	0	0

Based on the samples analyzed in this region.

2023 Corn Risk by State – Type A Trichothecenes



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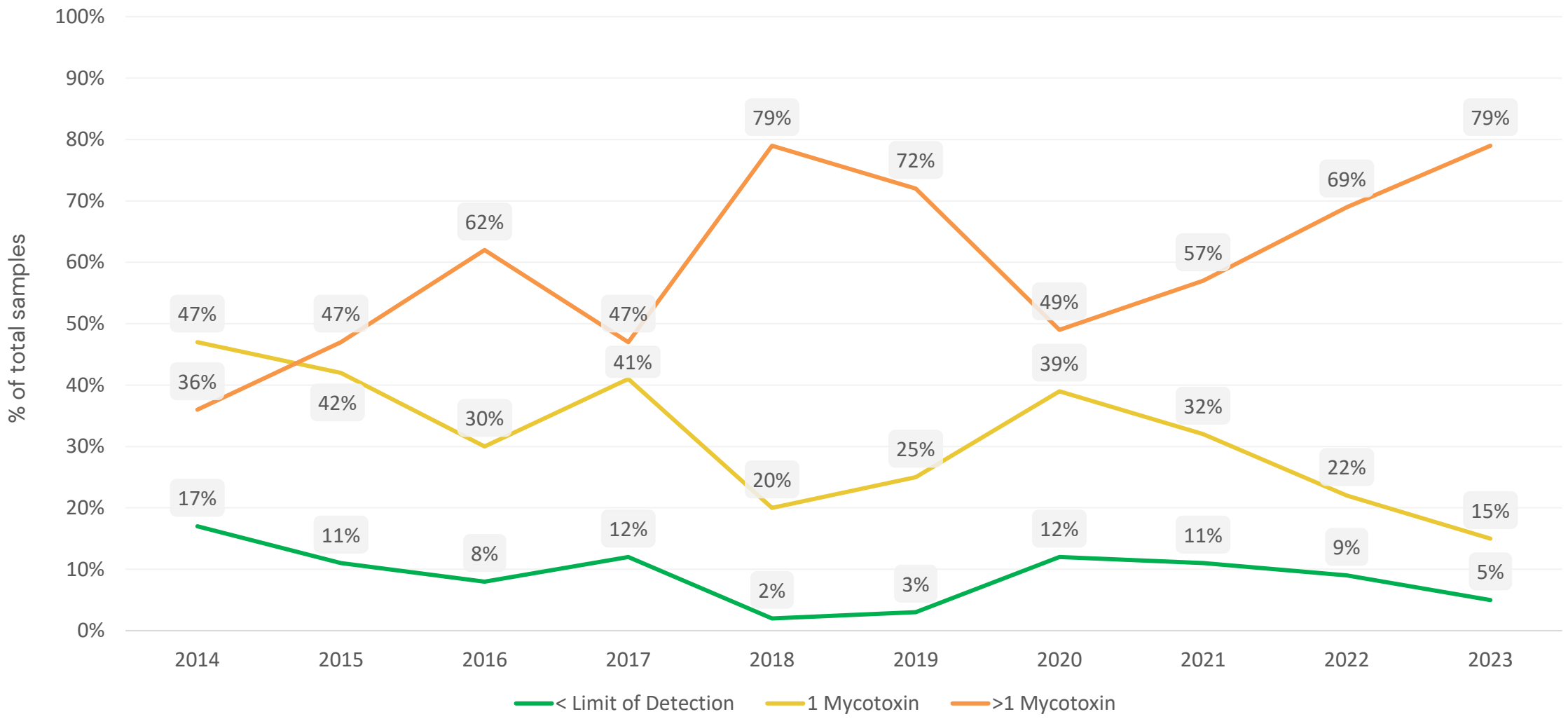
State with average > 100 ppb
State with average < 100 ppb
State with samples < LOD (5.0 ppb)
No sample submitted

State	Number of Samples	% Positive Samples	Avg of Positive Samples
MN	3	33	192
MI	4	25	139
IA	13	31	88
WI	23	78	47
VT	1	100	41
FL	3	33	24
MO	35	20	24
AR	16	13	16
CO	10	10	8
IL	4	25	8
LA	6	17	8
NE	33	3	8
GA	2	0	0
IN	9	0	0
KS	3	0	0
OH	16	0	0
PA	2	0	0
SD	1	0	0
TN	5	0	0

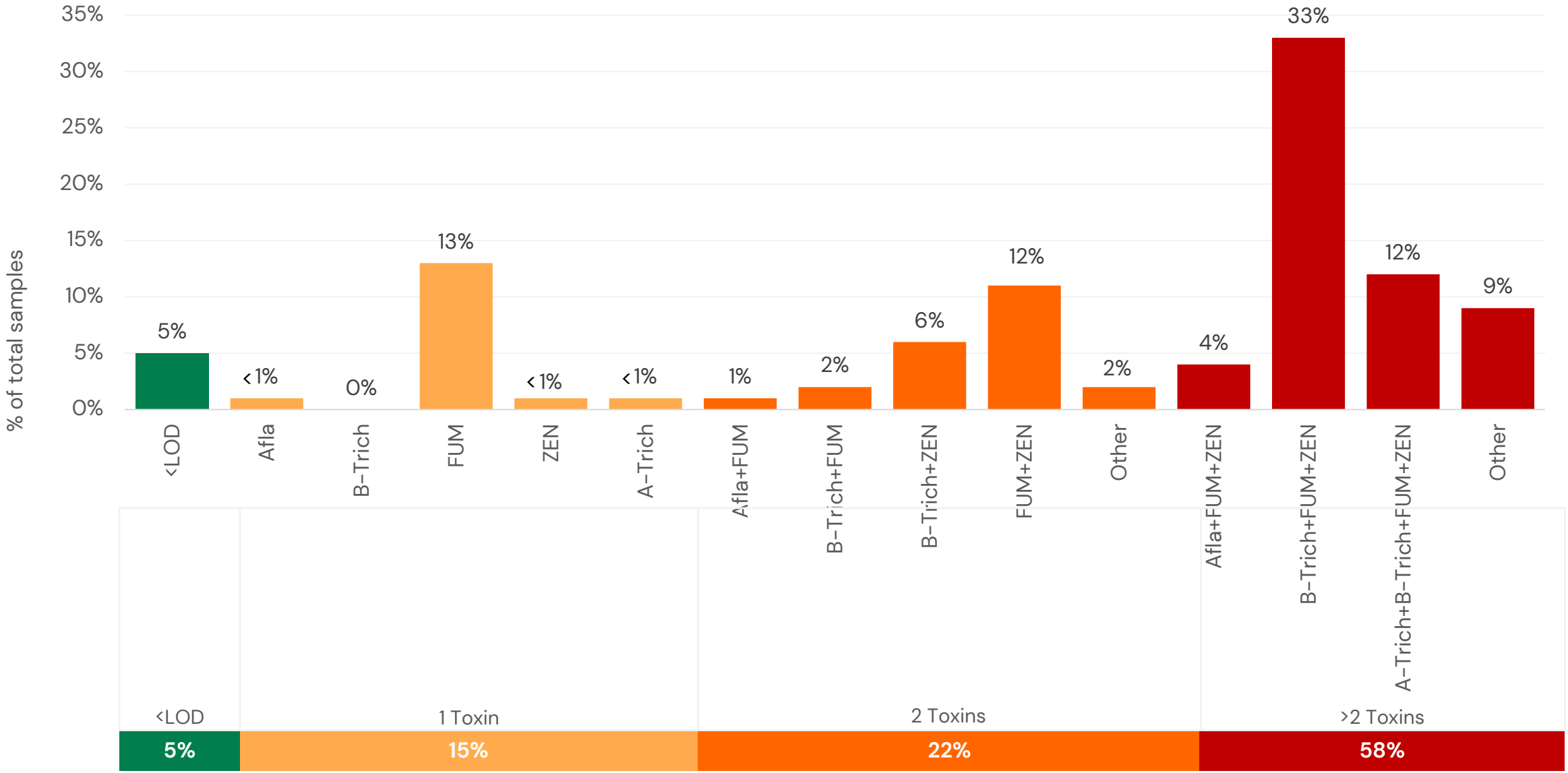
Based on the samples analyzed in this region.

Co-occurrence Trend in 2023 US Corn



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

Co-occurrence Profile in 2023 US Corn

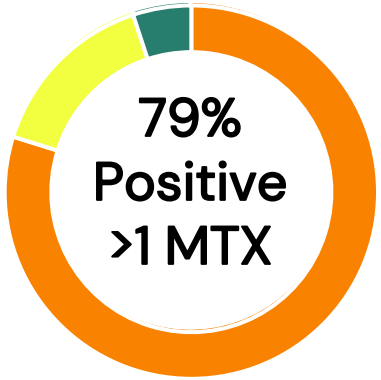


Based on the samples analyzed. Values may not total 100% due to rounding.

Mycotoxin Survey Summary – 2023 US Corn

189 corn samples submitted from 19 states

vs. 92% in 2022



vs. 69% in 2022

vs. 2022

B-Trich	• 59% positive / ↓ from 68% • 1562 ppb / ↑ from 1054 ppb
FUM	• 86% positive / ↑ from 79% • 2670 ppb / ↓ from 3675 ppb
ZEN	• 76% positive / ↑ from 31% • 117 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.

Questions?

Thank you!

Paige Gott, PhD
Strategic Product Manager
paige.gott@dsm.com
+1-210-727-6533

Erin Schwandt, PhD
Sr. 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
Sr. Poultry Technical Manager
chasity.pender@dsm.com
+1-210-842-0178

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