

# **Mycotoxin Monthly Survey**

## **April 2024**

# Mycotoxins & Analysis



LC-MS/MS



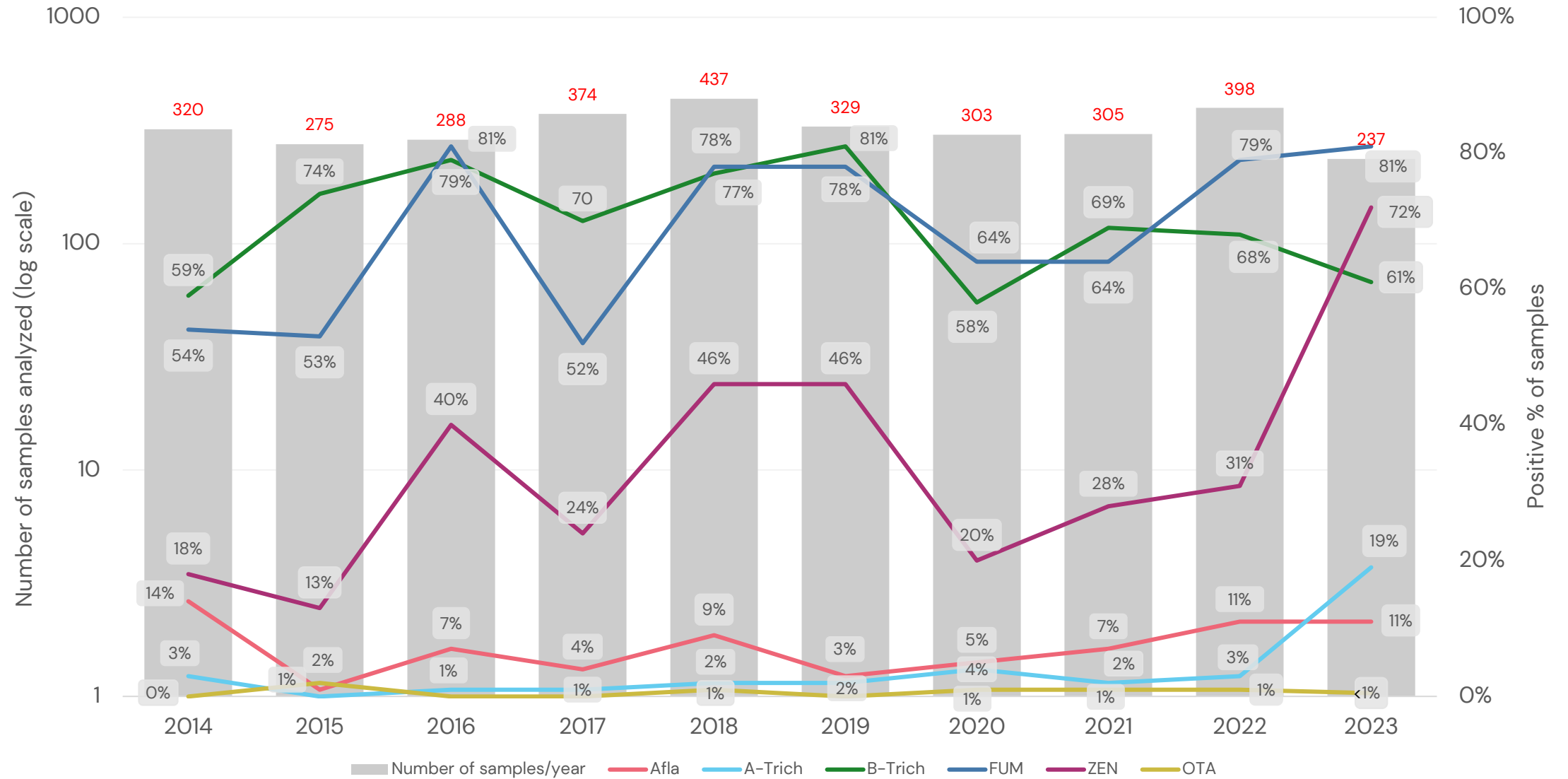
The survey results\*\* represent samples sent in for surveillance testing only and does not include any sample submitted following clinical signs.

Mycotoxin Group	Mycotoxins	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
Fumonisin (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.

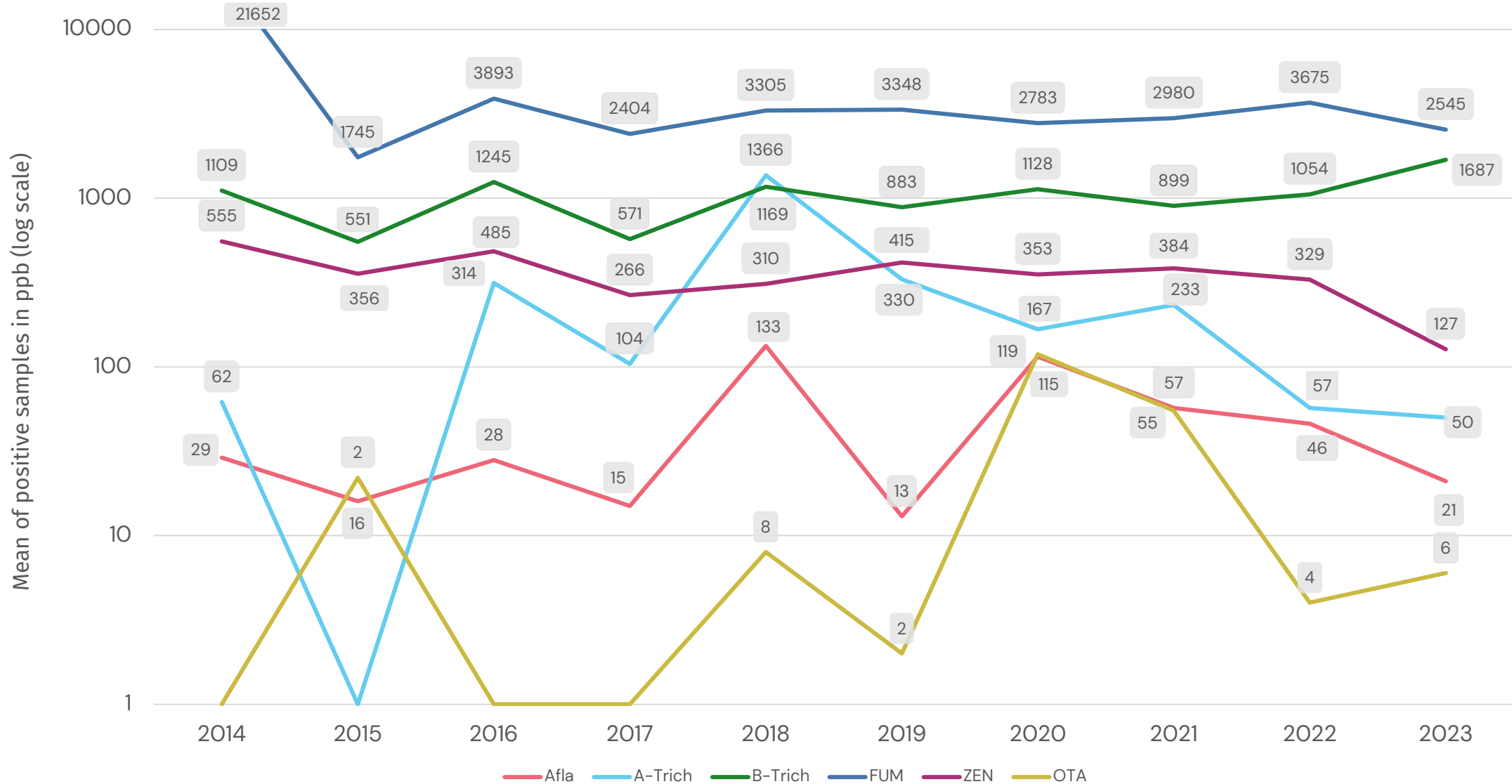
\*\*Results are reported as the summation of mycotoxin levels detected per Mycotoxin Group. For example, B-Trich represents total contamination detected for DON + 3-AcDON + 15-AcDON + NIV + FusX.

# 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.

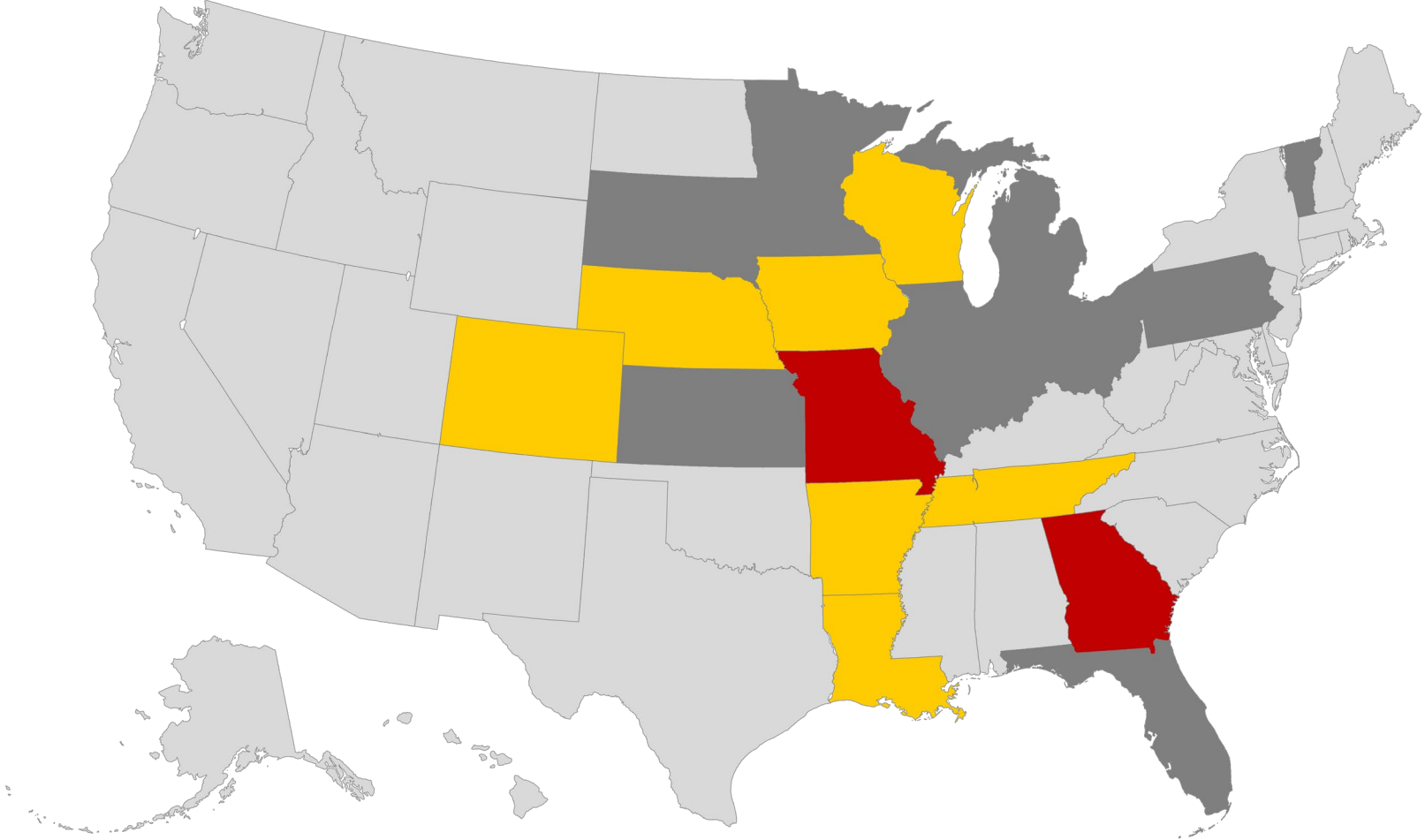
# Mean of Positives Trend in 2023 US Corn



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

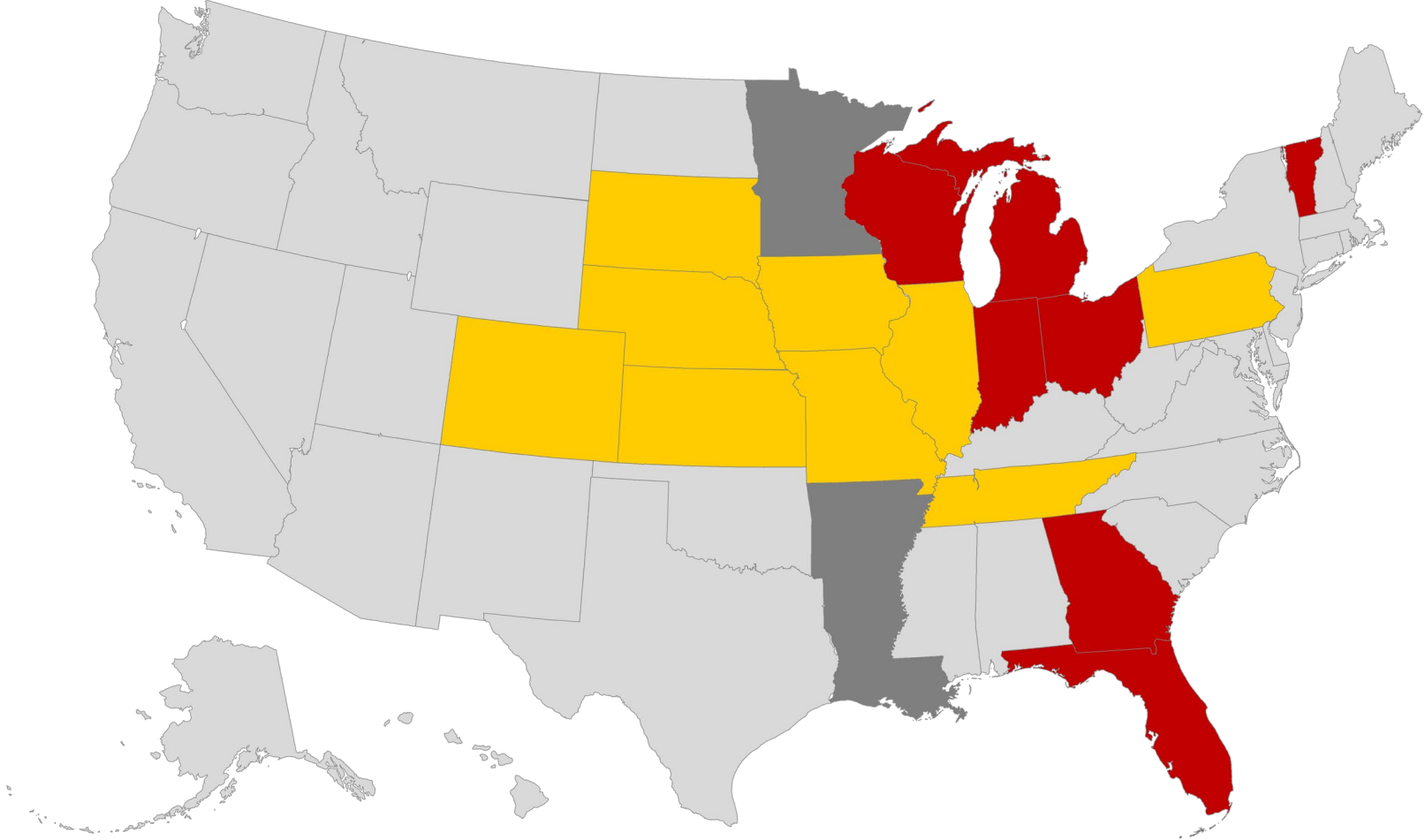
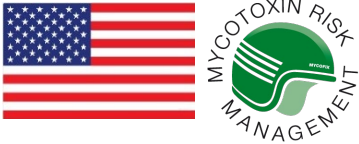
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State	Number of Samples	% Positive Samples	Avg of Positive Samples
GA	2	50	48
MO	41	27	34
AR	22	23	18
LA	6	33	14
IA	22	5	1
CO	10	30	0.3
NE	39	3	0.3
TN	6	17	0.3
WI	27	4	0.3
FL	3	0	0
IL	7	0	0
IN	12	0	0
KS	3	0	0
MI	4	0	0
MN	3	0	0
OH	22	0	0
PA	2	0	0
SD	3	0	0
VT	3	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

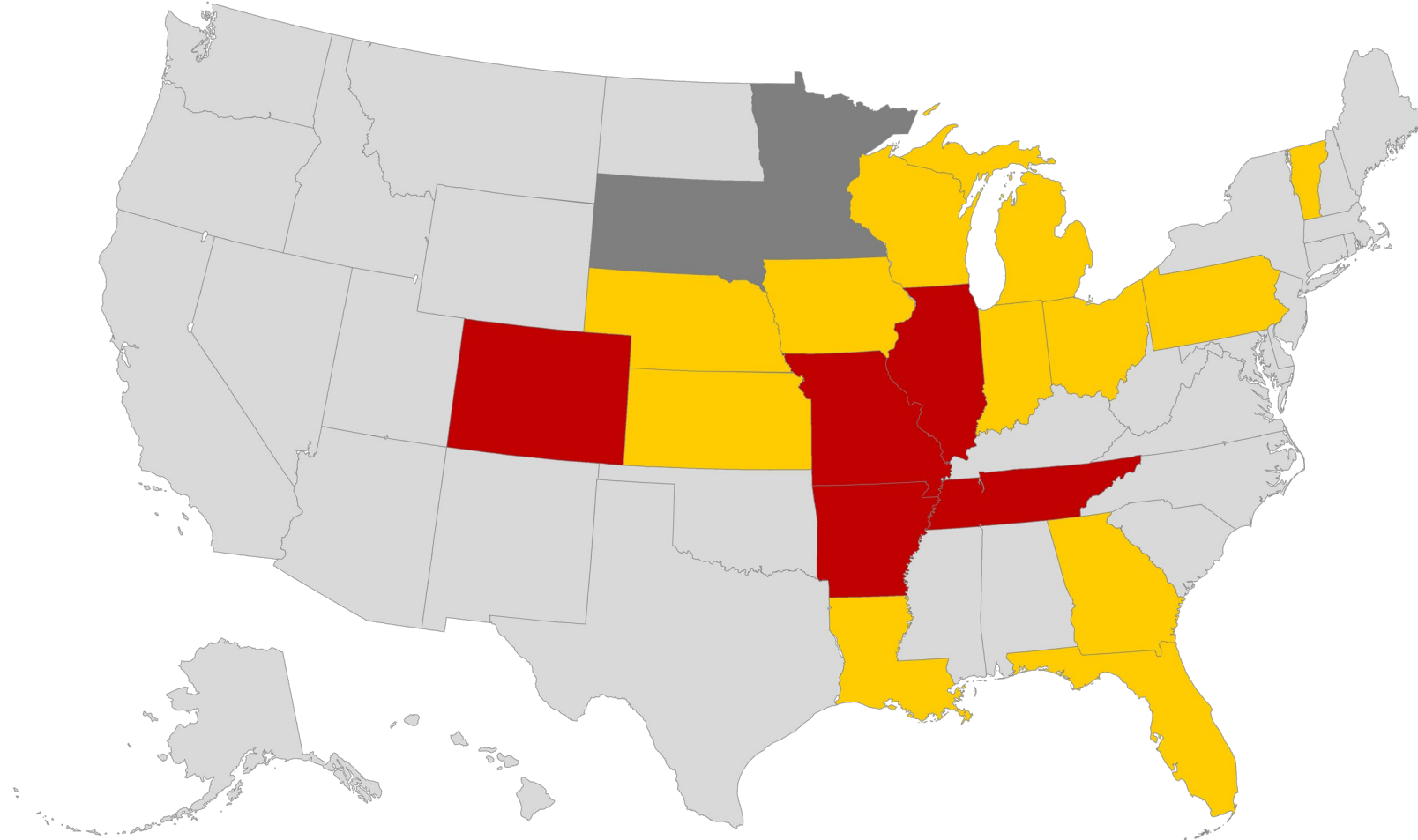
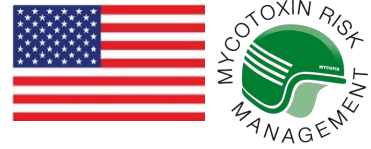
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State	Number of Samples	% Positive Samples	Avg of Positive Samples
OH	22	100	5937
FL	3	100	4950
MI	4	100	2841
IN	12	100	2305
VT	3	100	2254
GA	2	50	1204
WI	27	96	1026
IL	7	71	887
PA	2	100	694
MO	41	39	441
CO	10	100	298
NE	39	69	266
IA	22	32	175
KS	3	33	175
SD	3	33	175
TN	6	83	175
AR	22	0	0
LA	6	0	0
MN	3	0	0

Based on the samples analyzed in this region.



# 2023 Corn Risk by State - Fumonisin



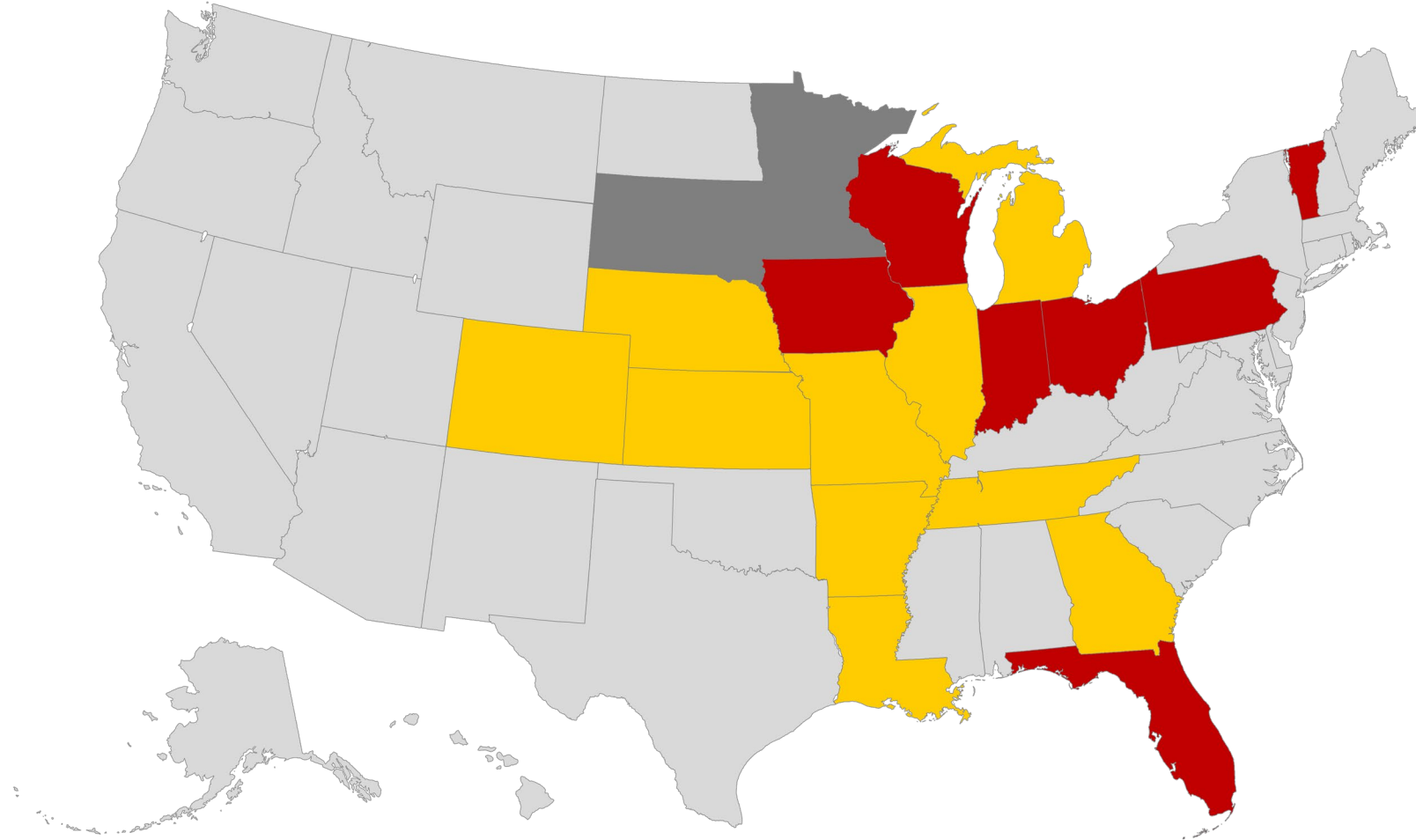
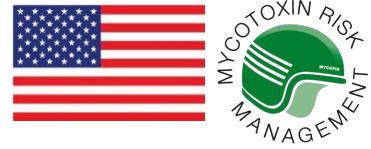
- State with average > 2,000 ppb
- State with average < 2,000 ppb
- State with samples < LOD (50.0 ppb)
- No sample submitted

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State	Number of Samples	% Positive Samples	Avg of Positive Samples
CO	10	100	9252
MO	41	98	5102
AR	22	91	3483
TN	6	100	3239
IL	7	100	2422
LA	6	100	1577
IA	22	55	1382
GA	2	100	1285
KS	3	100	1032
NE	39	95	923
IN	12	83	678
OH	22	55	666
VT	3	67	389
MI	4	50	298
WI	27	74	290
FL	3	100	232
PA	2	50	80
MN	3	0	0
SD	3	0	0

Based on the samples analyzed in this region.

# 2023 Corn Risk by State – Zearalenone



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

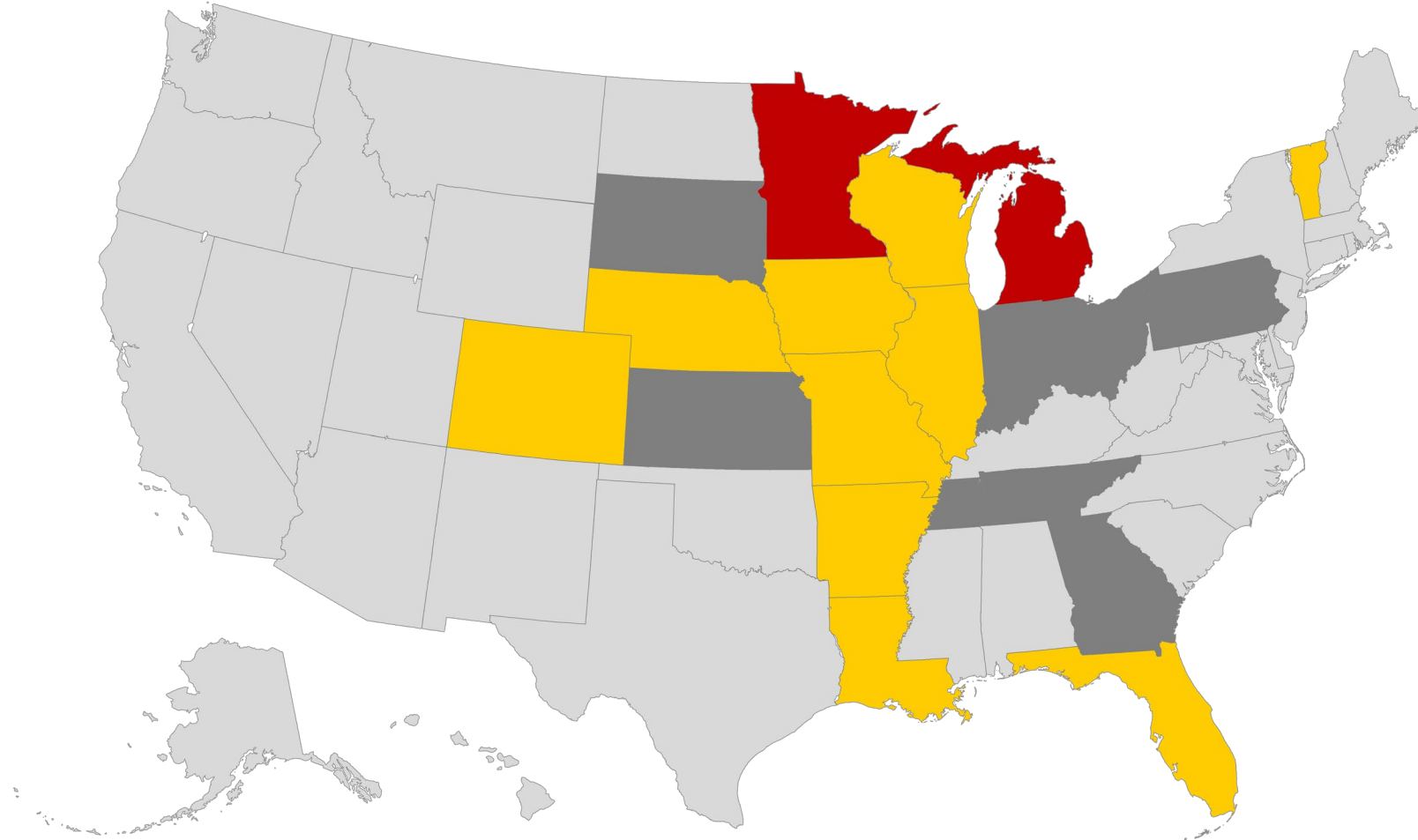
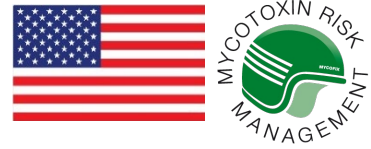
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State	Number of Samples	% Positive Samples	Avg of Positive Samples
PA	2	100	662
OH	22	100	450
FL	3	100	392
VT	3	100	356
IN	12	92	200
IA	22	45	122
WI	27	96	100
MI	4	100	77
MO	41	59	32
IL	7	100	30
TN	6	100	27
KS	3	100	24
NE	39	77	23
GA	2	100	14
AR	22	9	3
CO	10	100	3
LA	6	100	3
MN	3	0	0
SD	3	0	0

Based on the samples analyzed in this region.



# 2023 Corn Risk by State – Type A Trichothecenes



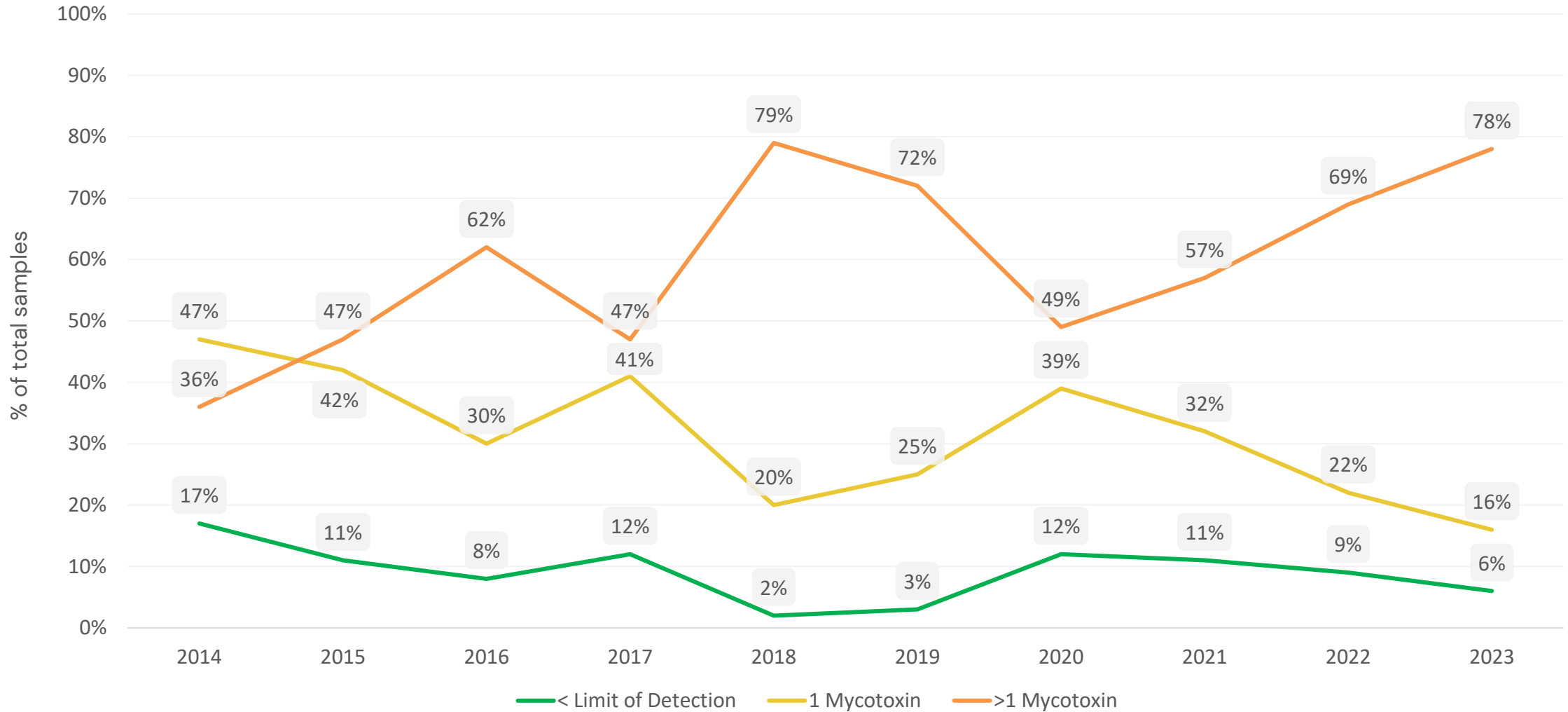
- State with average > 100 ppb
- State with average < 100 ppb
- State with samples < LOD (5.0 ppb)
- No sample submitted

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State	Number of Samples	% Positive Samples	Avg of Positive Samples
MN	3	33	192
MI	4	25	139
IA	22	18	88
VT	3	100	85
WI	27	74	47
AR	22	14	36
MO	41	20	27
FL	3	33	24
LA	6	17	8
IL	7	14	8
CO	10	10	8
NE	39	3	8
GA	2	0	0
IN	12	0	0
KS	3	0	0
OH	22	0	0
PA	2	0	0
SD	3	0	0
TN	6	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.

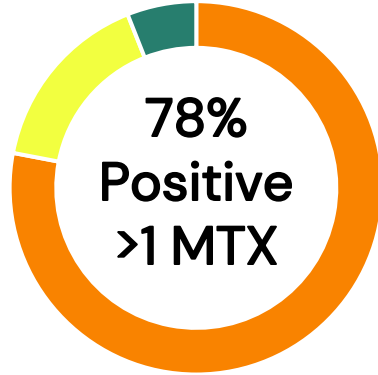
# Mycotoxin Survey Summary – 2023 US Corn



237 corn samples submitted from 19 states



vs. 92% in 2022



vs. 69% in 2022

vs. 2022

**B-Trich**

- 61% positive / ↓ from 68%
- 1687 ppb / ↑ from 1054 ppb

**FUM**

- 81% positive / ↑ from 79%
- 2545 ppb / ↓ from 3675 ppb

**ZEN**

- 72% positive / ↑ from 31%
- 127 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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