

# Mycotoxin Trends – Corn Silage



Drawing broad conclusions from lab summaries of mycotoxin data is challenging because:

- 1) Samples submitted to labs are not random. Customers submit samples because they already suspect there is a problem.
- 2) Across a wide enough geography, the distribution of mycotoxin contamination almost never changes.
- 3) Across a narrow enough geography, there are almost never enough samples to draw statistically defensible conclusions.

Regardless of these challenges, customers love mycotoxin summaries, and we love happy customers, so here's a quick summary of trends we've been seeing.

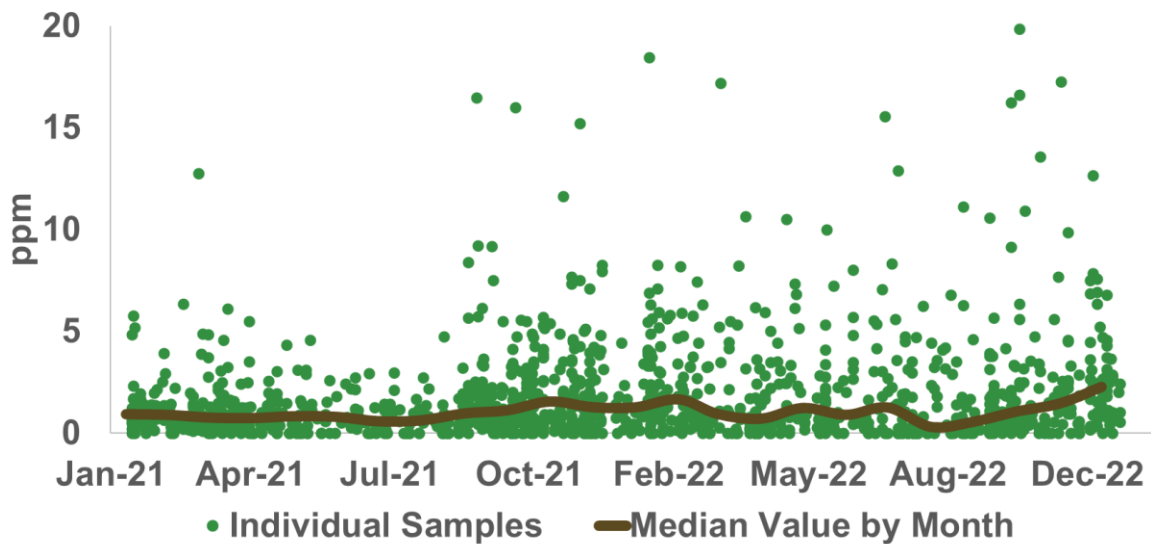
## Vomitoxin (DON)

2022 crop corn silage seems to have more Vomitoxin (DON). Since October 1<sup>st</sup>, 2022:

- 92% of samples have been positive, compared to 85% the previous 2 years
- Median values, and % of samples over 0.3 ppm, & 2.5 ppm have increased (see table below)

Crop year	Date range	Median (ppm)	% > 0.3 ppm	% > 2.5 ppm
2020	Jan – Sept 2021	0.8	78%	12%
2021	Oct 21–Sept 2022	1.1	76%	27%
2022	Oct 2022 – Now	1.6	85%	34%
2022	Dec 2022	2.3	92%	45%

## Corn Silage - Vomitoxin (DON)



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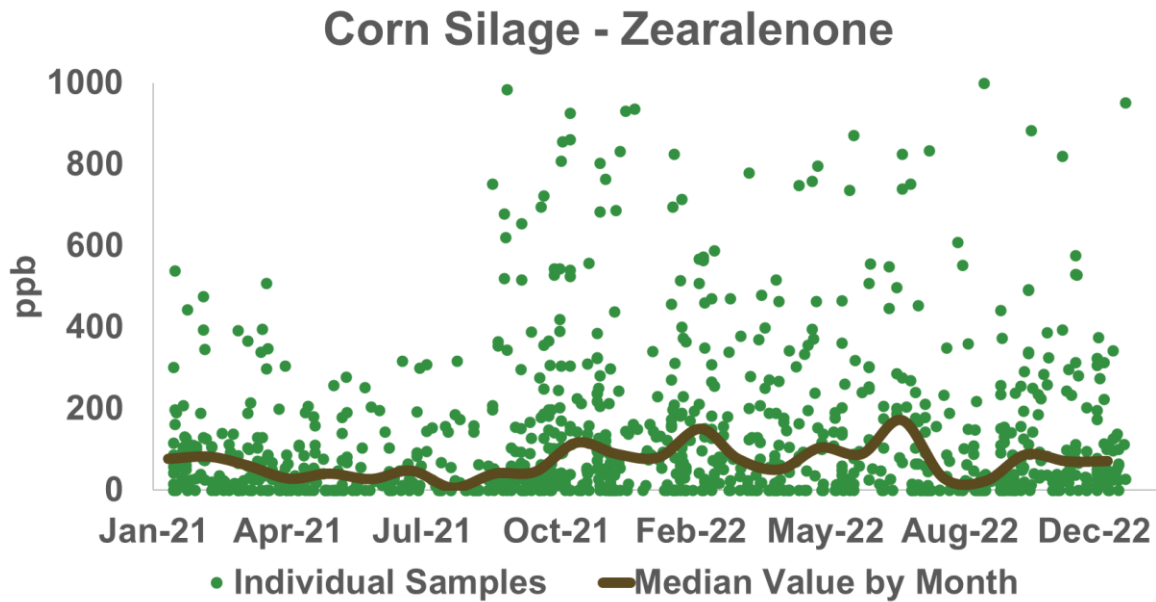
## Zearalenone (ZEA)

2022 crop corn silage seems to have more Zearalenone. Since October 1<sup>st</sup>, 2022:

- 88% of samples have been positive, compared to 76% the previous 2 years

However, the bump we're seeing in Zearalenone started in the 2021 crop year.

Crop year	Date range	Median (ppb)	% > 250 ppb	% > 1000 ppb
2020	Jan – Sept 2021	42	13%	5%
2021	Oct 2021 – Sept 2022	75	25%	7%
2022	Oct 2022 – Now	79	26%	8%



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## T2/HT2

2022 crop seems to have no significant change from the past 2 years. Since Oct 1<sup>st</sup>, 2022:

- 68% positive rate, which matches the previous 2-year values
- Median value during this same time period is 13 ppb
- 8% are over 100 ppb

## Fumonisin

2022 crop seems to have no significant change. Since Oct. 1<sup>st</sup>, 2022:

- 47% positive rate, slightly higher than 2-year data at 43%
- 12% of analyzed samples over 1 ppm
- 6% are over 5 ppm - most of these samples originated from Southwest US (Texas, New Mexico, Arizona, Kansas, Oklahoma, Colorado)

## Aflatoxins

- only 2.5% of analyzed samples were positive

## Ochratoxin-A

- only 2.3% of analyzed samples were positive, and none with concerning levels

In conclusion, Vomitoxin (DON) and Zearalenone have shown elevated levels in both the 2021 and 2022 corn silage crops. We've seen some uptick in Fumonisin, but only in samples from Southwest U.S. T2/HT2 has been consistent with historic norms, while Aflatoxin and Ochratoxin – A have infected a very low percentage of samples.

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