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World Mycotoxin Survey

The Global Threat
January – June 2026

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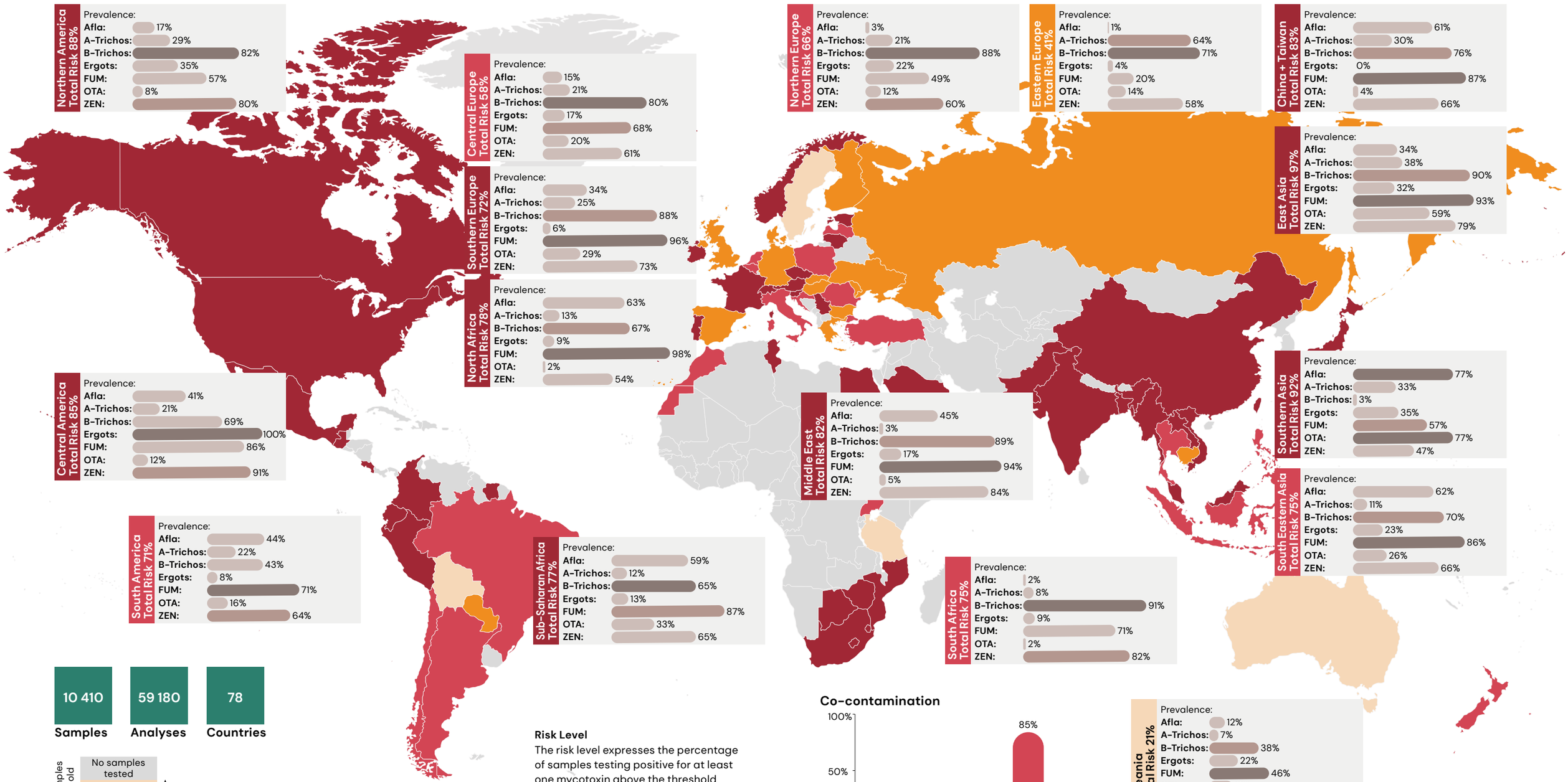
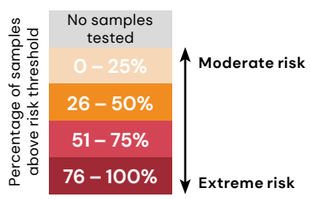
World Overview



10 410	59 180	78
Samples	Analyses	Countries

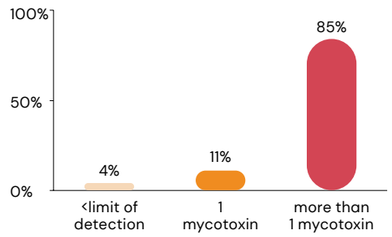


Risk Level

The risk level expresses the percentage of samples testing positive for at least one mycotoxin above the threshold level in parts per billion (ppb).
Recommended risk threshold of major mycotoxins in ppb

Afla	ZEN	DON	T2	FUM	OTA
2	50	150	50	500	10

Co-contamination



Number of mycotoxins per sample based on samples tested for 3 or more mycotoxins.

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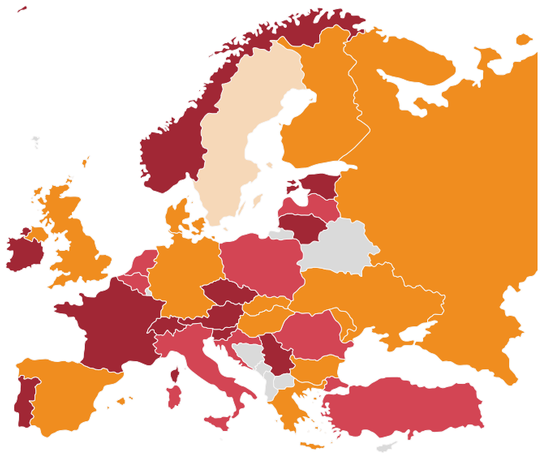
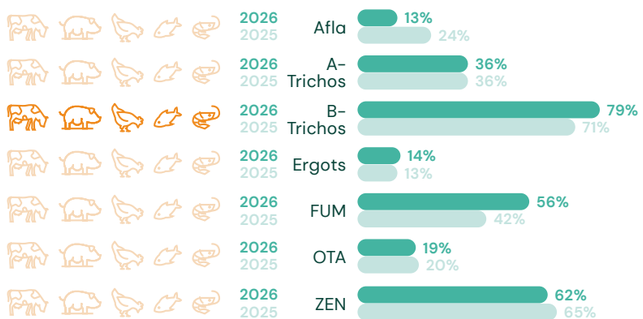
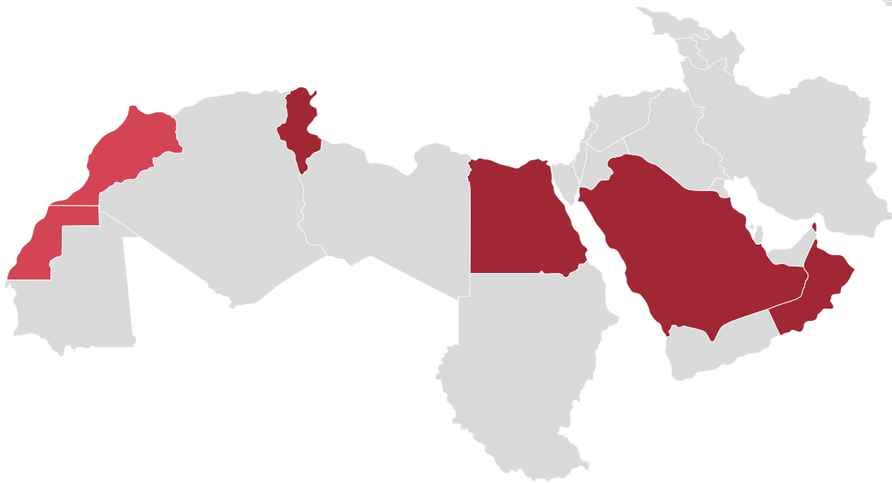
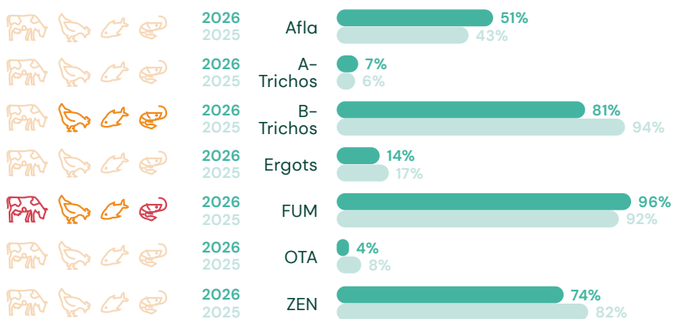
Europe



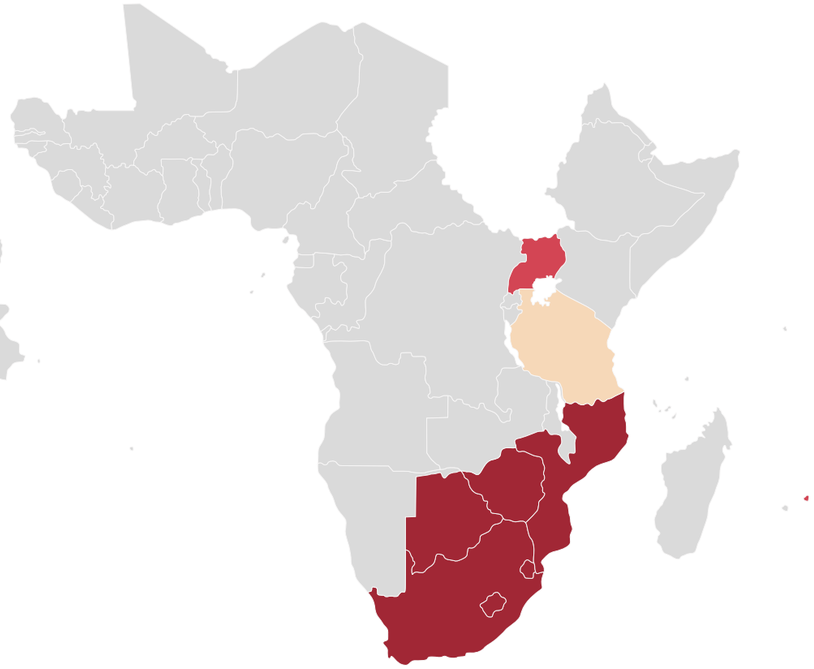


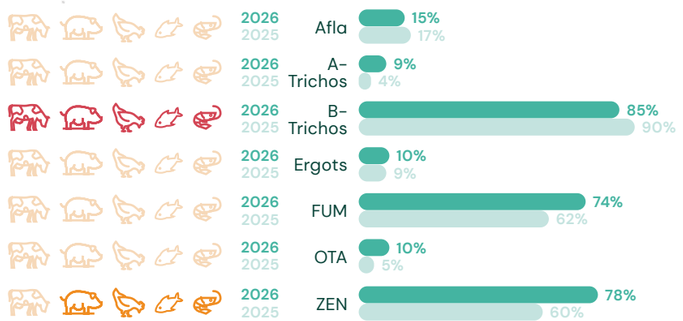
Middle East & North Africa





Sub-saharan Africa





Animal colours indicate the risk posed to this species by the prevalence and concentration of each mycotoxin in all samples from this region (light orange=moderate to red=extreme see color code page 2). % Contaminated samples January – June 2026 and January – June 2025

Total samples: 3 025	Afla	A-Trichos	B-Trichos	Ergots	FUM	OTA	ZEN
Number of samples tested	2 527	2 458	3 012	1 639	2 561	2 539	2 989
% Contaminated samples	13%	36%	79%	14%	56%	19%	62%
Average of positive (ppb)	4	92	513	88	478	5	85
Median of positive (ppb)	1	25	194	25	120	1	22
Maximum (ppb)	96	7 893	13 246	2 816	20 356	550	9 417

Total samples: 134	Afla	A-Trichos	B-Trichos	Ergots	FUM	OTA	ZEN
Number of samples tested	134	134	134	134	134	134	134
% Contaminated samples	51%	7%	81%	14%	96%	4%	74%
Average of positive (ppb)	2	58	263	62	1.449	2	25
Median of positive (ppb)	1	25	167	22	1220	1	13
Maximum (ppb)	18	242	2 797	437	10 970	5	191

Total samples: 486	Afla	A-Trichos	B-Trichos	Ergots	FUM	OTA	ZEN
Number of samples tested	486	486	486	484	486	486	486
% Contaminated samples	15%	9%	85%	10%	74%	10%	78%
Average of positive (ppb)	167	28	1 263	94	480	7	94
Median of positive (ppb)	4	25	898	30	75	2	49
Maximum (ppb)*	4 269	101	15 275	1 294	7 696	68	1 694

*corn kernel sample from Uganda

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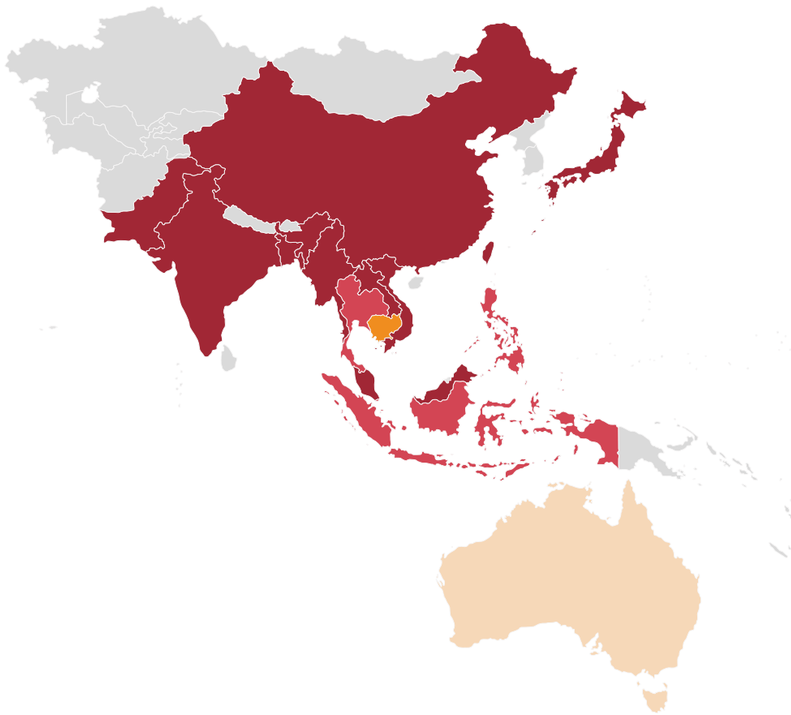
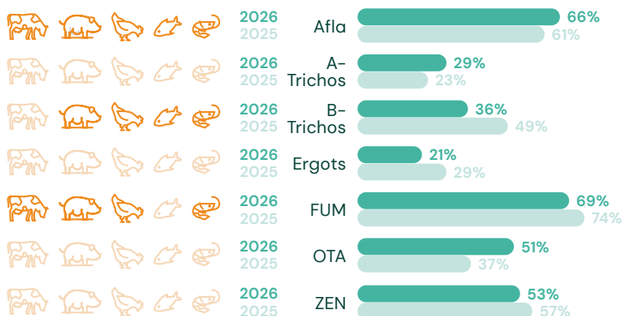
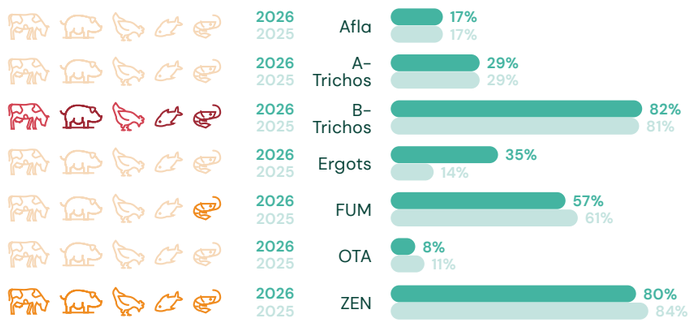
Asia

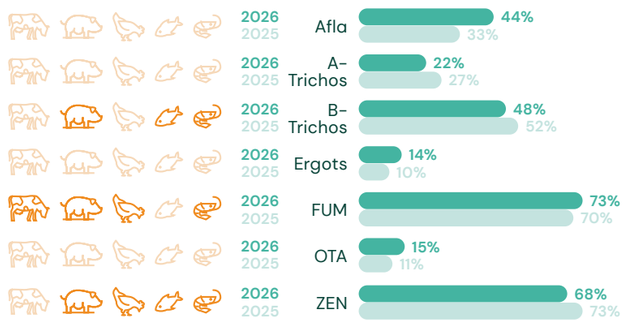




North America



Central & South America



Animal colours indicate the risk posed to this species by the prevalence and concentration of each mycotoxin in all samples from this region (light orange=moderate to red=extreme see color code page 2). % Contaminated samples January – June 2026 and January – June 2025

Total samples: 2 810	Afla	A-Trichos	B-Trichos	Ergots	FUM	OTA	ZEN
Number of samples tested	2 791	2 371	2 795	346	2 791	2 371	2 791
% Contaminated samples	66%	29%	36%	21%	69%	51%	53%
Average of positive (ppb)	19	30	764	50	2 089	20	144
Median of positive (ppb)	8	30	441	5	813	10	44
Maximum (ppb)	373	800	11 514	2 247	44 610	533	17 877

Total samples: 805	Afla	A-Trichos	B-Trichos	Ergots	FUM	OTA	ZEN
Number of samples tested	805	805	805	34	805	805	805
% Contaminated samples	17%	29%	82%	35%	57%	8%	80%
Average of positive (ppb)	10	85	1.614	69	1 428	5	181
Median of positive (ppb)	1	16	980	20	528	1	84
Maximum (ppb)	532	4 800	27 060	453	16 066	224	3 970

Total samples: 3146	Afla	A-Trichos	B-Trichos	Ergots	FUM	OTA	ZEN
Number of samples tested	3 145	2 674	2 594	83	2 928	1 604	2 850
% Contaminated samples	44%	22%	48%	14%	73%	15%	68%
Average of positive (ppb)	5	31	436	25	1 814	7	83
Median of positive (ppb)	2	26	175	26	860	2	39
Maximum (ppb)	527	296	9 280	62	90 277	175	12 191

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World Mycotoxin Survey

Spectrum Top®50
January to June 2026

Overview of the most frequently found mycotoxins, their masked and modified forms as well as emerging mycotoxins in all samples and finished feed

ALL samples

Metabolite	Prevalence	Average ppb	Maximum ppb
Deoxynivalenol	76%	458	12 775
Enniatin B	70%	281	157 420
Fumonisin B1	70%	527	23 898
Beauvericin	67%	51	3 985
Fumonisin B2	66%	169	6 651
Zearalenone	64%	83	17 877
Enniatin B1	60%	39	15 686
Moniliformin	57%	109	1 675
Alternariol	50%	70	14 822
Fumonisin B3	46%	97	4 256
Enniatin A1	33%	10	640
Deoxynivalenol-3-Glucoside	32%	106	4 013
Enniatin A	23%	5	324
15-Acetyldeoxynivalenol	21%	133	2 667
Nivalenol	21%	127	2 639
Aflatoxin B1	20%	22	2 297
Ochratoxin A	19%	5	550
Sterigmatocystin	13%	11	1 693
HT-2 Toxin	13%	56	770
Beta-Zearalenol	11%	22	289
Ergometrine	8%	34	376
T-2 Toxin	8%	29	380
Mycophenolic Acid	7%	180	8 913
3-Acetyldeoxynivalenol	6%	192	2 111
Penicillic Acid	5%	65	1 620

Top25 metabolites are presented according to their prevalence. Cut off for all metabolites 1 ppb (except for aflatoxins 0.5 ppb).

2 871	152 163	65
Samples	Analysis points	Countries

Regulated or guideline mycotoxins

Masked and modified mycotoxins

15-Acetyl-DON: fungal metabolite of DON; shown to be converted to DON in intestinal tract of pigs and chickens

DON-3-glucoside: plant metabolite of DON (masked DON); less toxic than DON, but it converted back to DON in the gastrointestinal tract of mammals.

Nivalenol: Type B trichothecene, more cytotoxic than DON in intestinal cells of pigs and ruminants (*in vitro*)

Ergot alkaloids

Zearalenone metabolites

Spectrum Top®50:

The most comprehensive mycotoxin analysis commercially available. It detects > 50 different mycotoxins (including masked and modified forms), emerging mycotoxins and fungal metabolites. The Spectrum Top® 50 method was developed by scientists of Romer Labs, a leading global supplier of diagnostic solutions for food and feed safety.

1 320	69 960	51
Samples	Analysis points	Countries

Emerging mycotoxins (non regulated)

Emerging mycotoxins: frequently found on agricultural commodities, not regulated; toxicity is under investigation, but toxic effects suggested in some scientific literature; EFSA started to publish reports to do a risk assessment for these toxins.

Moniliformin: broiler very susceptible, genotoxic, immunosuppressive; causes heart damage, muscular weakness, respiratory distress

Alternariol: no acute toxicity, cytotoxic and mutagenic *in vitro*, effects on reproductive & immune system *in vitro*.

Beauvericin and Enniatins: effects on immune system: accumulation in fat-rich tissue.

Sterigmatocystin: precursor of aflatoxins; causes similar effects as aflatoxin B_1 in animals, but lower acute toxicity; negative effects incl. bloody diarrhea, less milk production, less feed intake, hepatotoxicity, nephrotoxicity

Mycophenolic acid: shows a low acute toxicity in animals but may cause immunosuppression.

Finished Feed

Metabolite	Prevalence	Average ppb	Maximum ppb
Deoxynivalenol	85%	371	6 495
Fumonisin B1	84%	498	11 711
Moniliformin	82%	94	1 675
Fumonisin B2	79%	144	2 823
Enniatin B	76%	111	7 746
Zearalenone	74%	93	17 877
Beauvericin	73%	35	2 410
Enniatin B1	64%	16	390
Fumonisin B3	61%	82	1 916
Alternariol	58%	63	5 707
Deoxynivalenol-3-Glucoside	45%	77	905
Aflatoxin B1	29%	28	856
15-Acetyldeoxynivalenol	27%	120	2 667
Enniatin A1	25%	6	45
Enniatin A	22%	2	20
Ochratoxin A	22%	2	40
Nivalenol	15%	40	255
HT-2 Toxin	12%	44	342
Beta-Zearalenol	10%	14	106
Ergometrine	9%	17	134
Sterigmatocystin	7%	5	65
T-2 Toxin	6%	18	45
Aflatoxin G1	5%	7	55
Zearalanone	4%	13	81
Ergocristine	4%	18	62
Mycophenolic Acid	4%	42	213

Top25 metabolites are presented according to their prevalence. Cut off for all metabolites 1 ppb (except for aflatoxins 0.5 ppb).

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World Mycotoxin Survey

Spectrum 380®
January to June 2026

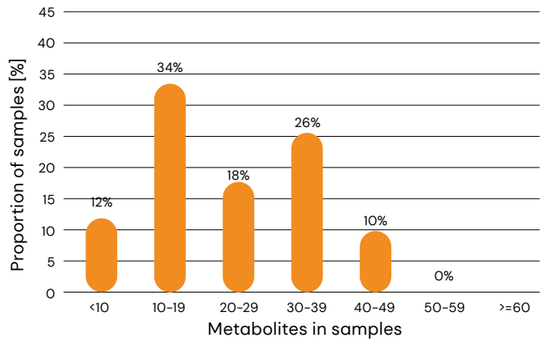
Multiple mycotoxin occurrence

Spectrum 380® results January to June 2026: the most comprehensive mycotoxin analysis available

435 Samples

348 000 Analysis points

19 Countries



23
average number
of Mycotoxins and Metabolites per sample

9 out of **10**
samples contaminated with *Fusarium* toxins

88 %
Contained **10**
or more mycotoxins and metabolites

Spectrum 380®:

The most advanced and comprehensive mycotoxin analysis available. It detects > 800 different mycotoxins (including masked and modified forms and emerging mycotoxins), fungal metabolites as well as plant and bacterial toxins and metabolites. This is not a routine analysis but it is done in special cases and/or also of course as part of research of future objectives. Spectrum 380® is developed and conducted by the world's leading independent mycotoxin research lab at the Department of Agrobiotechnology (IFA-Tulln) at the University of Natural Resources and Life Sciences Vienna and offered through cooperation with Performance Solutions plus Biomin Holding GmbH.

Advantages Spectrum 380® & Spectrum Top®50

- Low detection limits
- Qualitative and quantitative results
- Generate structural information
- Minimal sample treatment required
- Can cover a wide range of analytes
- Applicable to complex matrices

Liquid Chromatography – Mass Spectrometry (LC/MS)

Spectrum 380® is a technique that combines the physical separation proprieties of the HPLC with the mass analysis capabilities of the mass spectrometer (MS). The two analytical methods work synergistically. Chromatography separates mixtures with multiple components (e.g. mycotoxins), before the mass spectrometer then provides the structural features of individual components with high sensitivity and specificity.

The most common variations of the method are either liquid chromatography coupled to mass spectrometry (LC-MS) or tandem mass spectrometry (LC-MS/MS). In LC-MS/MS, the mass to charge ratio of the ions belonging to individual mycotoxins are measured before then being fragmented. Each fragment is re-measured in the second mass spectrometry step for extra specificity. Due to the extreme sensitivity, this method is the reference method of choice in many laboratories and it currently represents state-of-the-art of analytical chemistry. The advantages are listed on the right side.

Mycotoxins & metabolites

Metabolite	Prevalence	Average ppb	Maximum ppb
Moniliformin	79%	385	5 619
Beauvericin	78%	53	1 377
Tryptophol	75%	480	27 260
Bikaverin	73%	711	11 729
Aurofusarin	71%	456	6 483
Abscisic acid	68%	417	3 783
Culmorin	66%	90	1 973
Equisetin	60%	297	13 528
Enniatin B	60%	46	1346
Fumonisin B1	60%	1 939	30 992
Siccanol	60%	326	12 064
Genistein	57%	4 019	31 400
Daidzein	57%	6 008	47 029
Enniatin B1	56%	25	848
15-Hydroxyculmorin	56%	462	16 595
Fumonisin B2	55%	597	9 208
Daidzin	53%	37 922	123 300
Deoxynivalenol	53%	696	18 022
Emodin	53%	84	1 517
Alternariolmethylether	49%	220	11 744
Genistin	48%	59 066	206 900
Fumonisin B3	47%	329	3671
Biochanin	46%	1 305	36 549
Infectopyron	43%	2 594	100 272
Tenuazonic acid	43%	6 303	205 440
Glycitein	43%	1 919	12 605
Antibiotic Y	42%	85	4 165
Ononin	40%	116	3 429

Positive Samples [%] for metabolites present in >40% of samples (purple bars indicate regulated or guideline mycotoxins). Cut off for all metabolites 1 ppb (except for aflatoxins 0.5 ppb).

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