

# BIOMIN

# World Mycotoxin Survey

The Global Threat  
January – June 2020



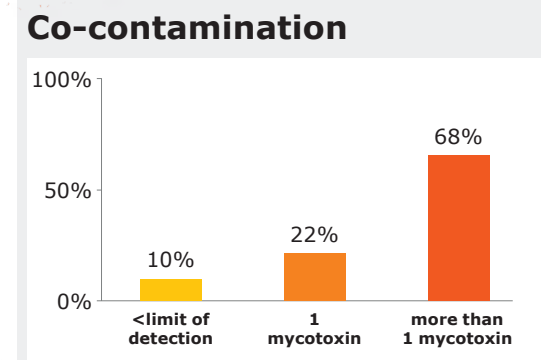
Biomim<sup>®</sup> Mycotoxin Survey



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Naturally ahead

≡ **Biomim<sup>®</sup>** ≡



Risk Level	Percentage of samples above risk threshold
Moderate risk	0 – 25%
	26 – 50%
	51 – 75%
Extreme risk	76 – 100%

No samples tested

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

Afla	ZEN	DON	T-2	FUM	OTA
2	50	150	50	500	10

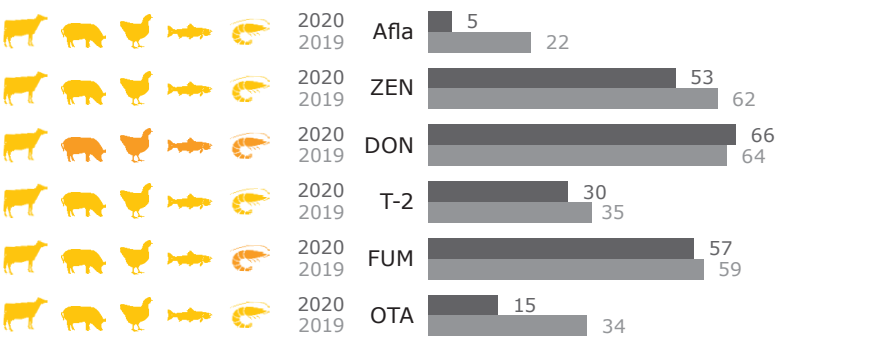
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The Global Threat – January to June 2020



Europe

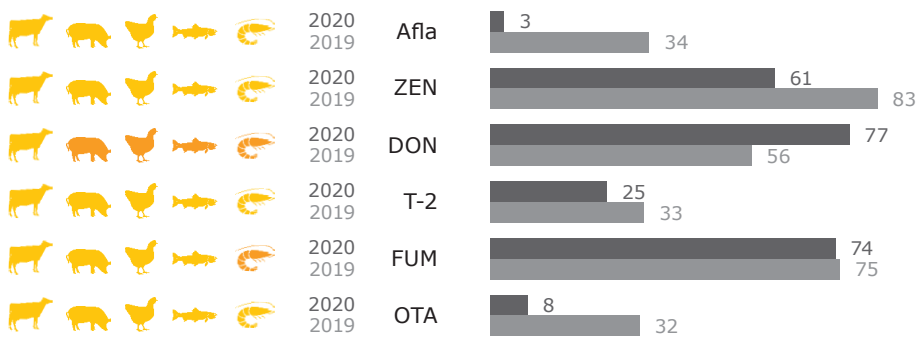


Animal colours indicate the risk posed to this species by the prevalence and concentration of each mycotoxin in all samples from this region (yellow=moderate to red=extreme see page 2)

% Contaminated samples January-June 2020 ■ and January-June 2019 ■

Total samples: 2673						
Total Risk Level: 53%*	Afla	ZEN	DON	T-2	FUM	OTA
Number of samples tested	1799	2387	2661	1968	2036	1776
% Contaminated samples	5%	53%	66%	30%	57%	15%
% Above risk threshold	3%	14%	41%	4%	16%	3%
Average of positive (ppb)	5	68	523	31	713	12
Median of positive (ppb)	3	22	230	13	155	3
Maximum (ppb)	37	3262	11875	898	16262	560

Middle East & North Africa

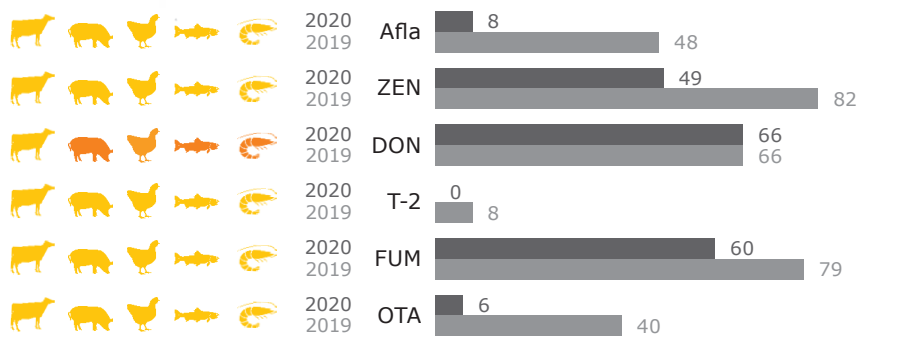
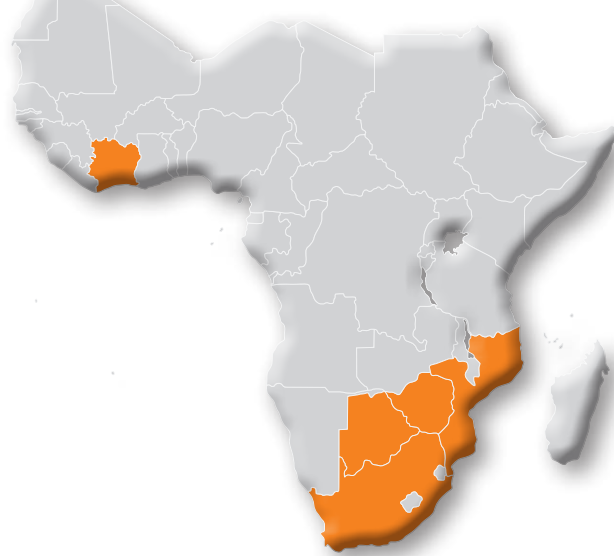


Animal colours indicate the risk posed to this species by the prevalence and concentration of each mycotoxin in all samples from this region (yellow =moderate to red=extreme see page 2)

% Contaminated samples January-June 2020 ■ and January-June 2019 ■

Total samples: 66						
Total Risk Level: 50%*	Afla	ZEN	DON	T-2	FUM	OTA
Number of samples tested	66	66	66	63	66	65
% Contaminated samples	3%	61%	77%	25%	74%	8%
% Above risk threshold	0%	24%	41%	0%	26%	0%
Average of positive (ppb)	2	131	479	11	693	3
Median of positive (ppb)	2	31	175	10	146	2
Maximum (ppb)	2	1653	5170	30	5211	7

Africa (without North Africa)



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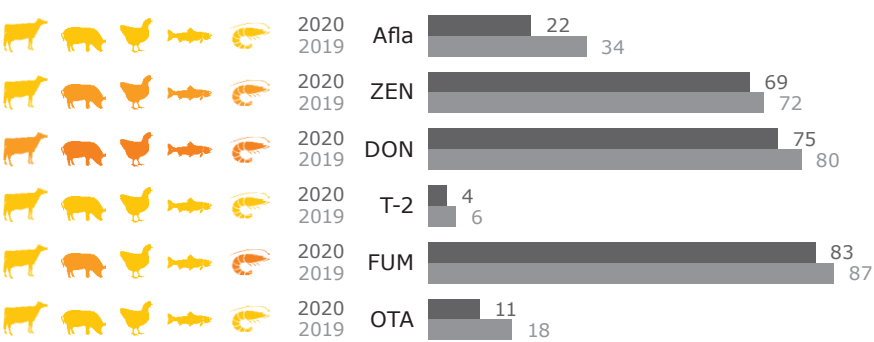
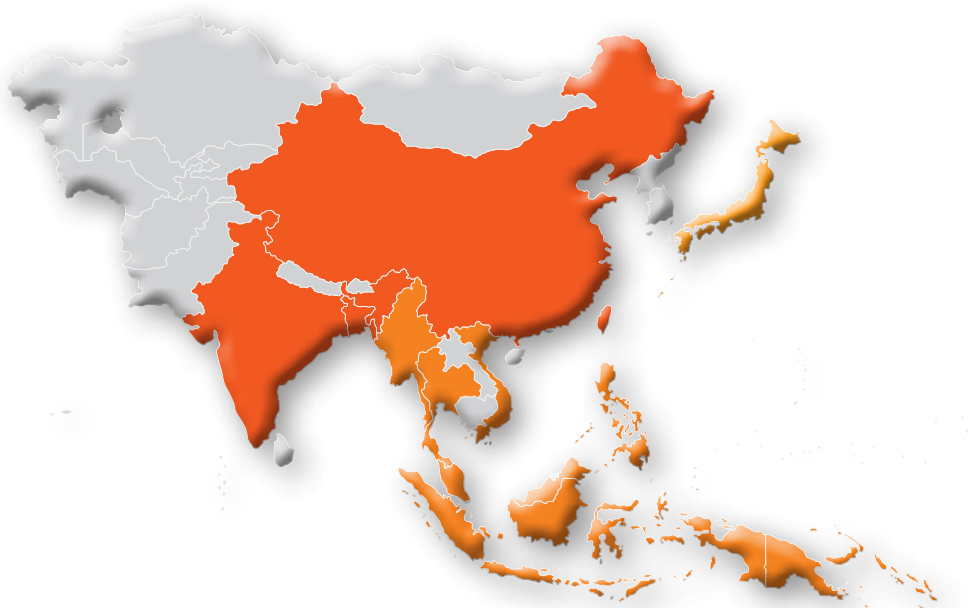
% Contaminated samples January-June 2020 ■ and January-June 2019 ■

Total samples: 257						
Total Risk Level: 61%*	Afla	ZEN	DON	T-2	FUM	OTA
Number of samples tested	245	257	257	257	257	257
% Contaminated samples	8%	49%	66%	0%	60%	6%
% Above risk threshold	6%	19%	50%	0%	12%	0%
Average of positive (ppb)	82	63	475	-	385	8
Median of positive (ppb)	5	37	292	-	113	2
Maximum (ppb)	1032	673	2931	-	4434	70

The Global Threat – January to June 2020



Asia

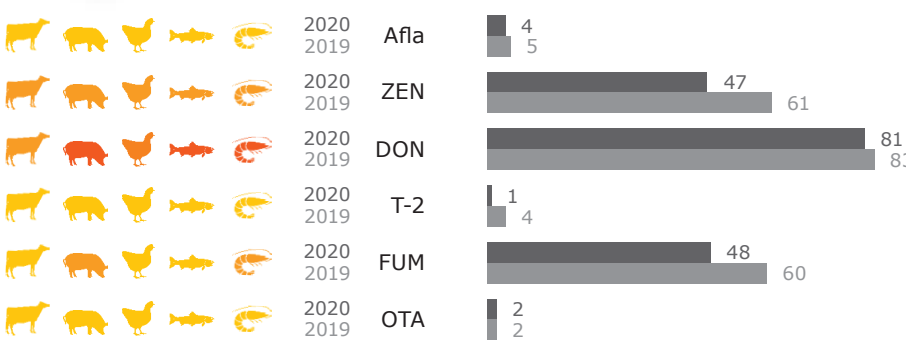


Animal colours indicate the risk posed to this species by the prevalence and concentration of each mycotoxin in all samples from this region (yellow=moderate to red=extreme see page 2)

% Contaminated samples January-June 2020 ■ and January-June 2019 ■

Total samples: 1231						
Total Risk Level: 79%*	Afla	ZEN	DON	T-2	FUM	OTA
Number of samples tested	1217	1193	1227	930	1166	917
% Contaminated samples	22%	69%	75%	4%	83%	11%
% Above risk threshold	18%	28%	62%	0%	38%	4%
Average of positive (ppb)	51	162	550	25	1013	26
Median of positive (ppb)	5	40	373	21	420	5
Maximum (ppb)	2495	11786	9689	169	35445	571

North America

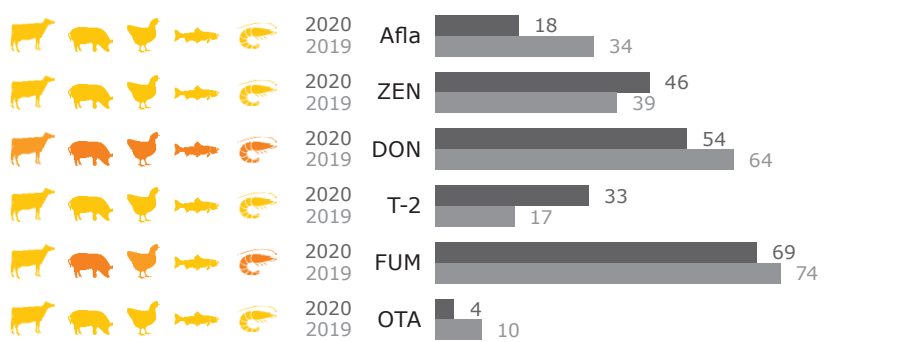


Animal colours indicate the risk posed to this species by the prevalence and concentration of each mycotoxin in all samples from this region (yellow =moderate to red=extreme see page 2)

% Contaminated samples January-June 2020 ■ and January-June 2019 ■

Total samples: 888						
Total Risk Level: 81%*	Afla	ZEN	DON	T-2	FUM	OTA
Number of samples tested	861	860	831	747	850	861
% Contaminated samples	4%	47%	81%	1%	48%	2%
% Above risk threshold	3%	45%	75%	1%	31%	0%
Average of positive (ppb)	13	260	761	393	3569	3
Median of positive (ppb)	4	122	500	83	1098	2
Maximum (ppb)	67	13351	5327	3153	66588	21

South America



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% Contaminated samples January-June 2020 ■ and January-June 2019 ■

Total samples: 3832						
Total Risk Level: 67%*	Afla	ZEN	DON	T-2	FUM	OTA
Number of samples tested	3153	2691	2478	1018	2809	134
% Contaminated samples	18%	46%	54%	33%	69%	4%
% Above risk threshold	13%	23%	54%	10%	59%	0%
Average of positive (ppb)	5	154	915	43	2048	3
Median of positive (ppb)	3	51	460	37	1340	4
Maximum (ppb)	179	43854	13780	321	35550	5

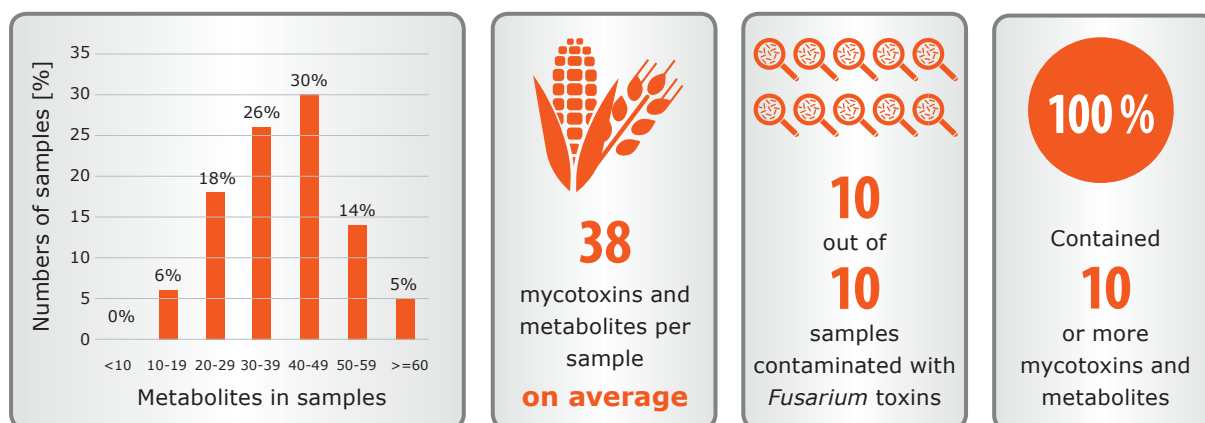
# BIOMIN World Mycotoxin Survey

## Multiple Mycotoxin Overview



### Multiple mycotoxin occurrence

Spectrum 380® results January to June 2020:  
the most comprehensive mycotoxin analysis available\*



Total: 440 samples tested

In which raw materials are emerging mycotoxins most commonly found?



**Maize:**  
Moniliformin 92%  
Aurofusarin 85%



**Finished Feed:**  
Beauvericin 100%  
Enniatin B and B<sub>1</sub> 100%

### Mycotoxins & metabolites

		Average	Maximum
cyclo(L-Pro-L-Val)	95%	4691	18387
cyclo(L-Pro-L-Tyr)	94%	2237	21997
Beauvericin	90%	23	456
Brevianamid F	88%	114	1413
Equisetin	87%	36	1441
Enniatin B	82%	41	592
Tryptophol	80%	457	4642
Culmorin	80%	808	63029
<b>Deoxynivalenol</b>	80%	<b>200</b>	<b>2873</b>
15-Hydroxyculmorin	80%	177	2413
Enniatin B <sub>1</sub>	78%	28	376
Aurofusarin	78%	237	7795
Rugulosovin	75%	164	948
Emodin	69%	96	1957
Enniatin A <sub>1</sub>	69%	12	162
Moniliformin	66%	47	752
Genistein	66%	5707	34870
Infectedopyron	65%	1790	80561
Genistin	64%	35708	416700
Abscisic acid	64%	428	2578
<b>Zearalenone</b>	64%	<b>43</b>	<b>3262</b>
Altersetin	63%	62	1916
Daidzein	62%	3360	24645
Daidzin	60%	28066	269100
<b>Fumonisin B<sub>1</sub></b>	55%	<b>802</b>	<b>11478</b>
Asperglaucide	55%	124	10425
Glycitein	54%	5909	121244
Flavoglucan	53%	97	8064
Asperphenamate	52%	86	5487

\*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 BIOMIN.

Positive Samples [%] for metabolites present in more than 50% of samples  
(orange bars indicate regulated or guideline mycotoxins)  
Cut off for all metabolites 1 ppb (except for aflatoxins 0.5 ppb)