



Global Mycotoxin Report

January - December 2025

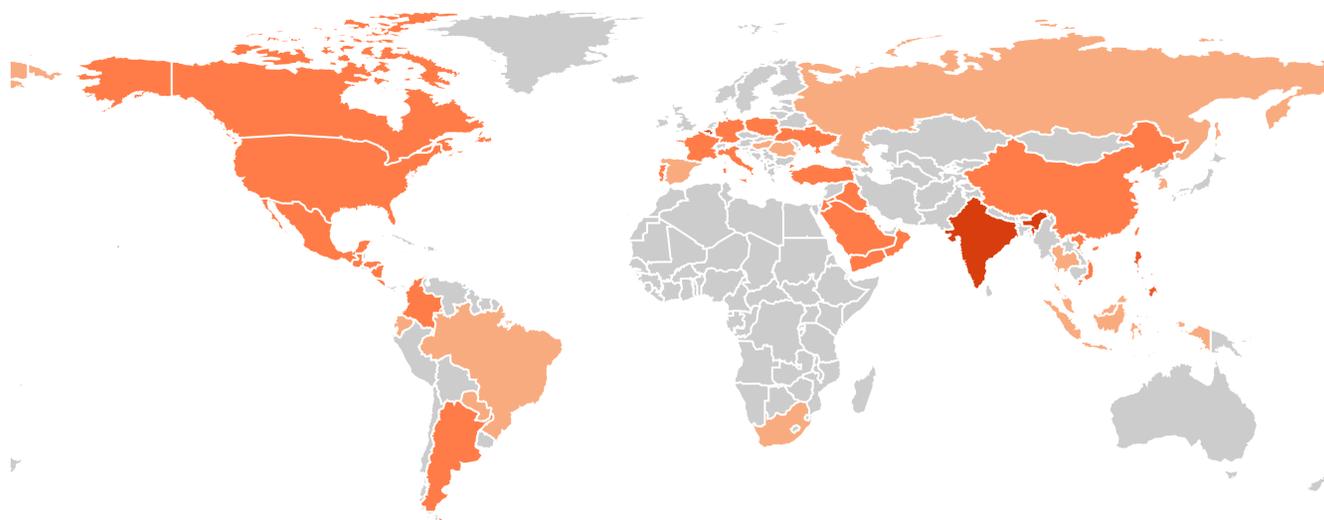
Global Mycotoxin Performance Risk

Date

1/1/2025



12/29/2025



Percent Analyses Above Cargill Performance Risk Threshold		
Color	Range	Risk Threshold
■	75-100%	Severe Risk
■	50-74%	High Risk
■	25-49%	Moderate Risk
■	0-24%	Slight Risk

Cargill Performance Risk Thresholds: Cargill's performance risk thresholds are based upon extensive in vivo research and equations that model performance loss determined by mycotoxin levels found in feed ingredients. Low ~ 0.5% performance loss; Medium 1% performance loss; and High ~2% performance loss;



Analysis: 389,926



Countries: 41



Total Samples: 151,895

Toxins Tested	Toxins Analyses
Aflatoxin (AFL)	124,383
Fumonisin (FUM)	53,850
Ochratoxin (OTA)	16,950
T2 Toxin (T2)	20,800
Vomitoxin (DON)	115,012
Zearalenone (ZEN)	58,931

Total Analysis by Ingredient Group

Corn	Cereals	Oilseeds	Forages	Others
				
242,656	87,509	27,233	30,116	2,412

Total Analysis by Region

Asia	N° Samples	Central & South America	N° Samples	China	N° Samples	Europe	N° Samples	Middle East & Africa	N° Samples	North America	N° Samples	Russia	N° Samples
AFL	21,325	AFL	12,584	AFL	31,465	AFL	15,556	AFL	2,518	AFL	39,245	AFL	1,690
DON	3,195	DON	10,631	DON	32,397	DON	21,277	DON	1,054	DON	45,055	DON	1,403
FUM	3,232	FUM	10,162	FUM	1,183	FUM	5,402	FUM	1,561	FUM	31,836	FUM	474
OTA	2,252	OTA	5,569	OTA	268	OTA	5,020	OTA	1,335	OTA	1,096	OTA	1,410
T2	2,525	T2	6,254	T2	323	T2	5,166	T2	1,336	T2	3,419	T2	1,777
ZEN	3,439	ZEN	10,252	ZEN	27,605	ZEN	6,694	ZEN	2,463	ZEN	7,000	ZEN	1,478
Total	35,968	Total	55,452	Total	93,241	Total	59,115	Total	10,267	Total	127,651	Total	8,232

Global Mycotoxin Prevalence

Region

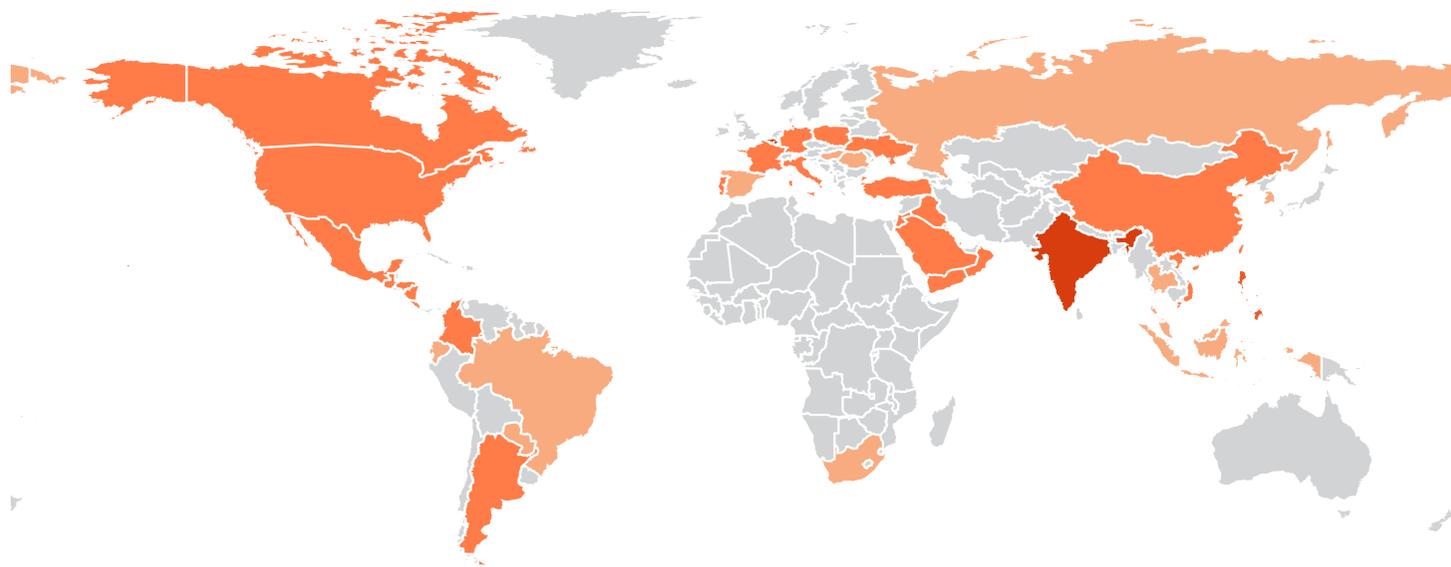
All

Date

1/1/2025



12/29/2025

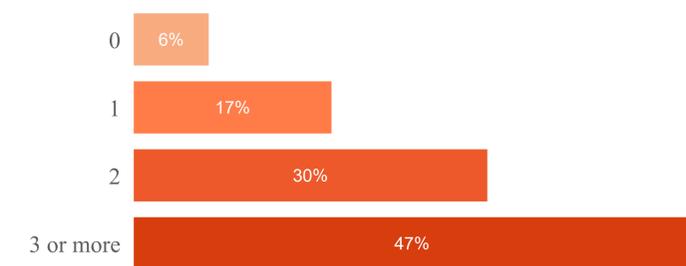


Percent Analyses Above Cargill Performance Risk Threshold		
Color	Range	Risk Threshold
■	75-100%	Severe Risk
■	50-74%	High Risk
■	25-49%	Moderate Risk
■	0-24%	Slight Risk

Multiple Mycotoxin Contamination: % of samples with 0, 1, 2, 3 or more mycotoxins (For samples tested for 3 or more Mycotoxins)

of mycotoxins found in the tested sample

● 0 ● 1 ● 2 ● 3 or more



Mycotoxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average Contamination (ppb)	Maximum Result (ppb)
Aflatoxin (AFL)	124,383	64%	15%	12.7	544
Fumonisin (FUM)	53,850	77%	48%	1,666.2	77,464
Ochratoxin (OTA)	16,950	69%	1%	3.9	3,800
T2 Toxin (T2)	20,800	56%	14%	26.1	3,700
Vomitoxin (DON)	115,012	78%	53%	783.3	24,010
Zearalenone (ZEN)	58,931	72%	43%	110.9	14,862
Total	389,926	71%	34%	525.1	77,464

Percent Analyses Above Cargill Performance Risk Threshold

Region	Mycotoxin	Percent Above
Asia	AFL	63%
	DON	27%
	FUM	35%
	OTA	2%
	T2	8%
	ZEN	32%
Central & South America	AFL	6%
	DON	42%
	FUM	64%
	OTA	1%
	T2	9%
	ZEN	51%
China	AFL	6%
	DON	60%
	FUM	44%
	OTA	0%
	T2	3%
	ZEN	40%
Europe	AFL	2%
	DON	42%
	FUM	44%
	OTA	0%
	T2	11%
	ZEN	39%
Middle East & Africa	AFL	12%
	DON	12%
	FUM	39%
	OTA	0%
	T2	30%
	ZEN	62%
North America	AFL	3%
	DON	60%
	FUM	45%
	OTA	2%
	T2	16%
	ZEN	47%
Russia	AFL	5%
	DON	5%
	FUM	13%
	OTA	1%
	T2	36%
	ZEN	22%

Global Analysis by Mycotoxin and Ingredient

CORN

(Corn and corn byproducts)



Mycotoxin Analyzed	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average Contamination (ppb)	Maximum Result (ppb)
Aflatoxin (AFL)	76,572	64%	10%	11.2	544
Fumonisin (FUM)	43,452	84%	55%	1,731.6	77,464
Ochratoxin (OTA)	8,367	75%	1%	3.8	3,800
T2 Toxin (T2)	10,951	67%	15%	26.8	2,520
Vomitoxin (DON)	67,154	79%	59%	849.3	23,502
Zearalenone (ZEN)	36,160	77%	46%	115.1	14,862

CEREALS

(Wheat, barley, oat, rice, sorghum, triticale, byproducts, other)



Mycotoxin Analyzed	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average Contamination (ppb)	Maximum Result (ppb)
Aflatoxin (AFL)	27,625	75%	33%	15.8	400
Fumonisin (FUM)	3,892	42%	7%	367.2	60,400
Ochratoxin (OTA)	3,784	54%	1%	4.4	1,500
T2 Toxin (T2)	4,131	49%	20%	32.3	3,700
Vomitoxin (DON)	36,231	80%	44%	537.9	24,010
Zearalenone (ZEN)	11,846	53%	23%	64.1	4,700

OILSEEDS

(soybean, rapeseed, canola, sunflower, cottonseed, palm, kernel, byproducts, other)



Mycotoxin Analyzed	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average Contamination (ppb)	Maximum Result (ppb)
Aflatoxin (AFL)	9,414	64%	18%	21.4	479
Fumonisin (FUM)	2,622	50%	10%	320.7	17,937
Ochratoxin (OTA)	2,547	67%	1%	5.6	2,400
T2 Toxin (T2)	1,855	59%	13%	19.1	495
Vomitoxin (DON)	4,824	44%	10%	147.3	10,460
Zearalenone (ZEN)	5,971	79%	52%	84.3	6,292

FORAGE

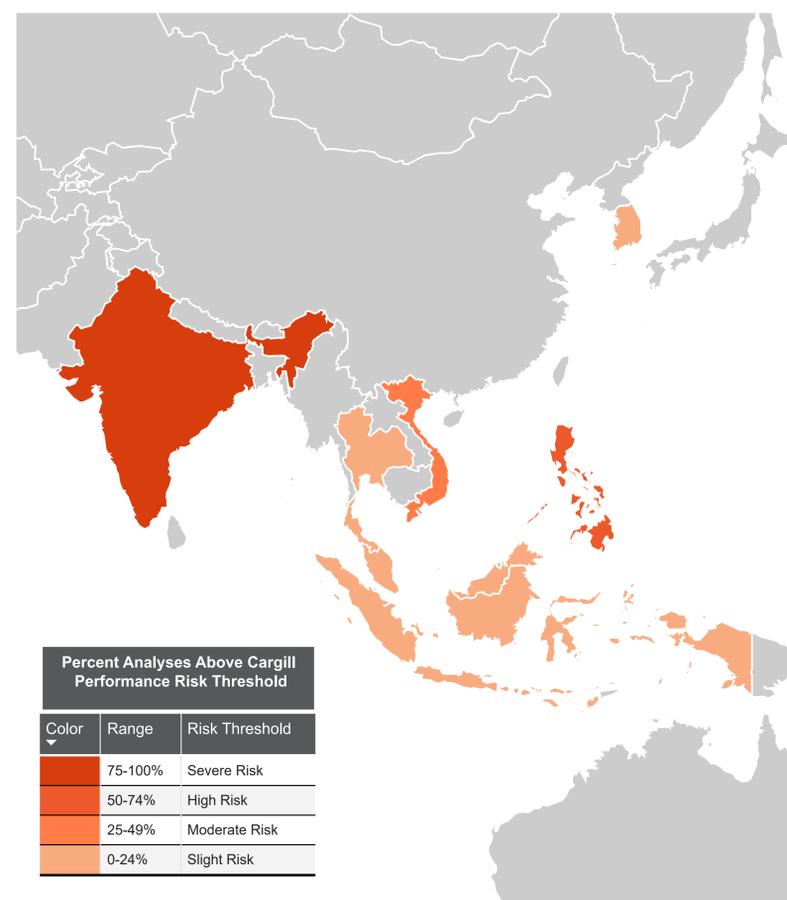
(Corn silage, grass silage, hay, others)



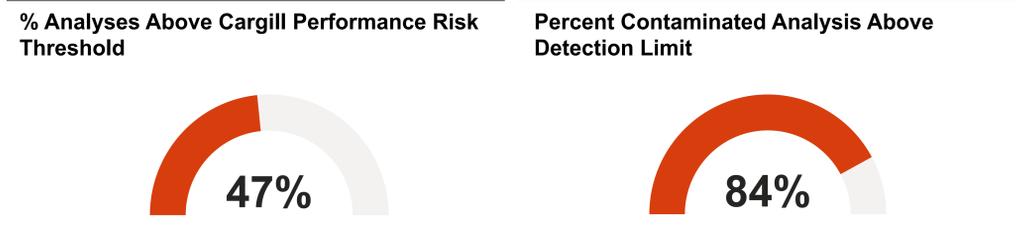
Mycotoxin Analyzed	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average Contamination (ppb)	Maximum Result (ppb)
Aflatoxin (AFL)	10,160	38%	1%	2.2	253
Fumonisin (FUM)	3,612	49%	37%	2,550.4	59,540
Ochratoxin (OTA)	2,104	79%	0%	2.2	474
T2 Toxin (T2)	3,696	33%	5%	18.1	740
Vomitoxin (DON)	6,133	77%	73%	1,821.7	22,925
Zearalenone (ZEN)	4,411	66%	53%	211.6	10,779

Regional Data: Asia

Region: Asia | Country: All | Date: 1/1/2025 - 12/29/2025



Total Analysis: 35,968 | **Total Contaminated Analysis Above Detection Limit: 30,265**



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	21,325	93%	63%	55%
DON	3,195	77%	27%	36%
FUM	3,232	76%	35%	43%
OTA	2,252	59%	2%	2%
T2	2,525	68%	8%	14%
ZEN	3,439	74%	32%	34%
Total	35,968	84%	47%	41%

Analysis by Main Feed Material

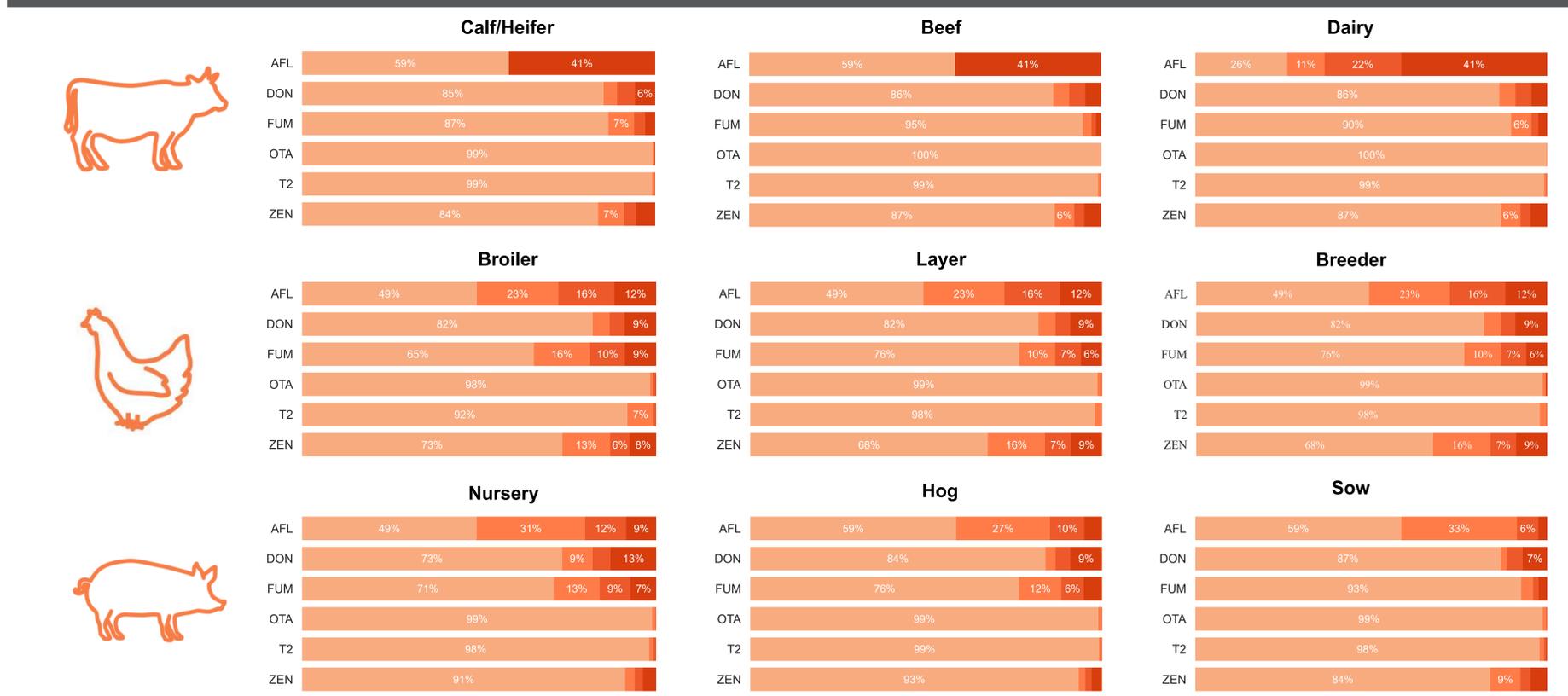
Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	7,868	92%	58%	37.1	480
DON	1,314	75%	44%	1,359.9	23,446
FUM	1,672	92%	64%	2,391.8	77,464
OTA	859	44%	2%	7.9	911
T2	1,115	53%	8%	13.5	183
ZEN	1,377	75%	43%	406.5	14,862

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	11,759	96%	70%	24.9	350
DON	1,204	82%	20%	210.1	6,100
FUM	899	60%	3%	267.5	19,723
OTA	808	68%	1%	3.3	120
T2	794	80%	7%	11.5	395
ZEN	1,251	72%	31%	103.4	3,758

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	1,570	77%	45%	34.3	432
DON	586	77%	4%	102.2	9,282
FUM	571	56%	1%	174.9	17,937
OTA	499	72%	2%	3.1	56
T2	555	78%	8%	10.5	172
ZEN	712	79%	15%	21.9	193

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	33	27%	0%	3.2	10
DON	30	20%	17%	215.7	270
FUM	30	77%	53%	1,750.8	5,715
OTA	30	17%	0%	6.2	18
T2	0	0%	0%	-	-
ZEN	30	77%	50%	54.7	174

Cargill Performance Risk Level By Species**



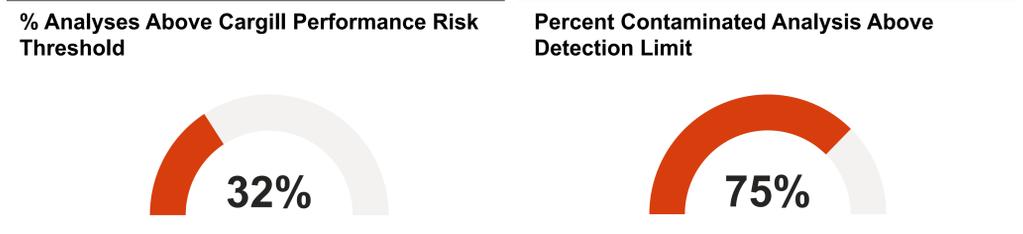
**Based on Cargill research, low, medium and high risk equate to an estimated 0.5%, 1% and 2% performance loss respectively. % Analyses Contaminated Within Cargill Performance Risk Thresholds: Minimum, Low, Medium, High

Regional Data: Central & South America

Region: Central & South America | Country: All | Date: 1/1/2025 - 12/29/2025



Total Analysis: 55,452 | **Total Contaminated Analysis Above Detection Limit: 41,455**



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	12,584	62%	6%	6%
DON	10,631	69%	42%	40%
FUM	10,162	85%	64%	67%
OTA	5,569	87%	1%	-
T2	6,254	79%	9%	13%
ZEN	10,252	76%	51%	45%
Total	55,452	75%	32%	31%

Analysis by Main Feed Material

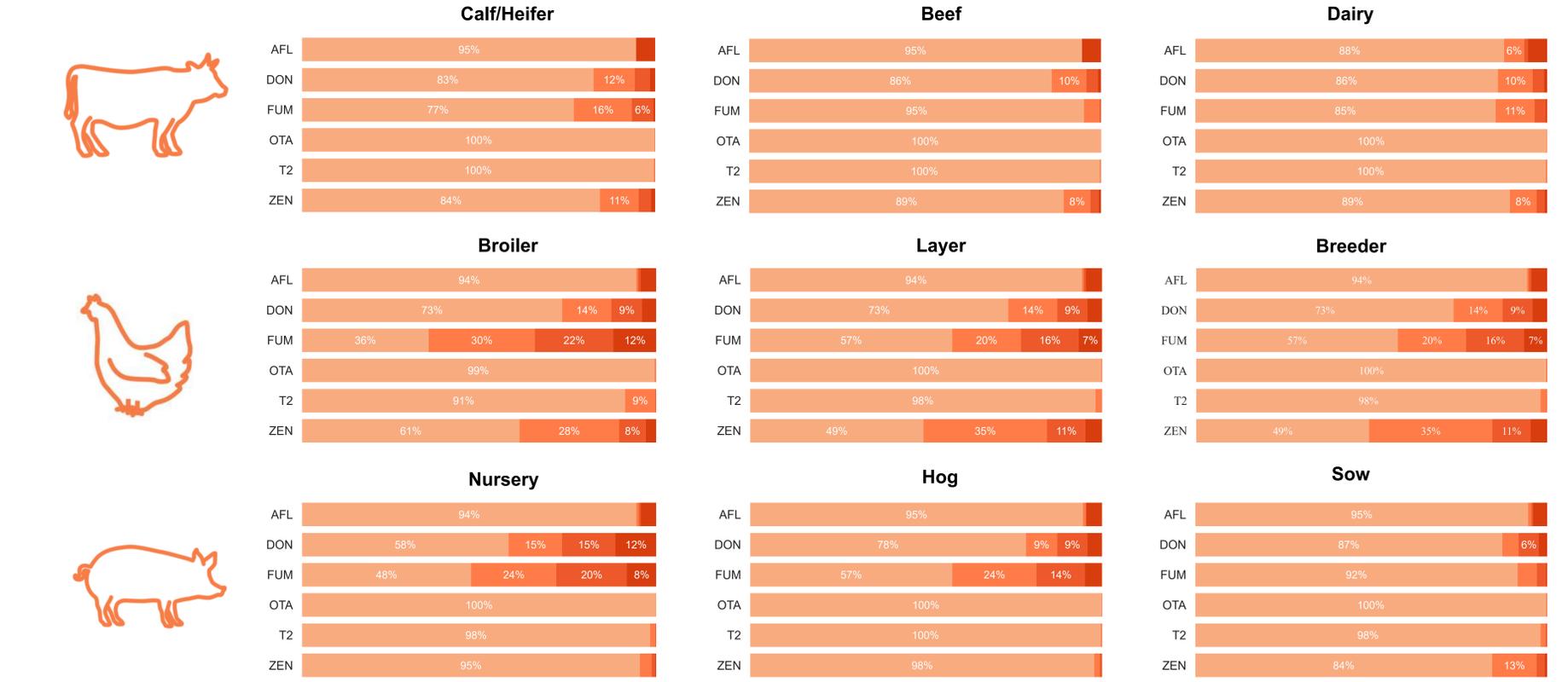
Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	9,196	65%	6%	20.9	499
DON	8,166	73%	47%	491.3	9,100
FUM	8,392	93%	74%	1,531.7	59,000
OTA	4,777	91%	1%	2.4	800
T2	5,444	85%	10%	18.0	204
ZEN	7,994	77%	48%	70.3	2,300

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	1,070	71%	0%	1.9	58
DON	1,171	84%	41%	526.3	5,800
FUM	387	35%	12%	586.6	3,770
OTA	377	61%	1%	2.0	20
T2	359	46%	3%	14.7	181
ZEN	1,007	79%	57%	105.9	2,704

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	1,975	52%	15%	53.2	479
DON	1,253	33%	8%	166.7	4,200
FUM	1,131	50%	15%	410.0	11,010
OTA	412	76%	0%	1.2	12
T2	268	51%	5%	16.7	78
ZEN	1,041	83%	73%	84.2	313

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	330	16%	1%	5.8	15
DON	28	11%	7%	473.4	786
FUM	252	62%	39%	1,014.2	6,030
OTA	3	33%	0%	1.5	2
T2	182	3%	2%	60.2	77
ZEN	197	13%	12%	129.1	440

Cargill Performance Risk Level By Species**



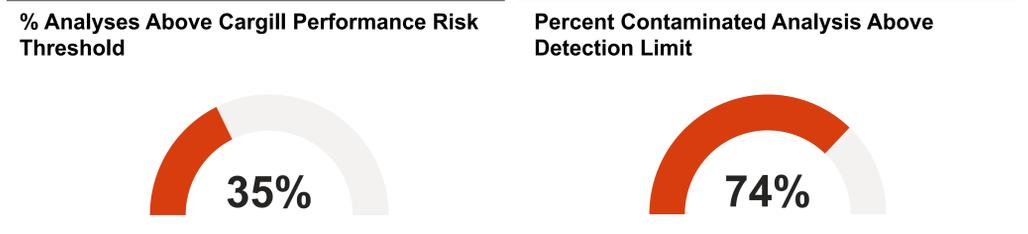
**Based on Cargill research, low, medium and high risk equate to an estimated 0.5%, 1% and 2% performance loss respectively. % Analyses Contaminated Within Cargill Performance Risk Thresholds: Minimum, Low, Medium, High

Regional Data: Greater China

Region: Greater ... Country: All Date: 1/1/2025 - 12/29/2025



Total Analysis: **93,241** Total Contaminated Analysis Above Detection Limit: **69,238**



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	31,465	61%	6%	14%
DON	32,397	86%	60%	66%
FUM	1,183	69%	44%	48%
OTA	268	30%	0%	1%
T2	323	54%	3%	3%
ZEN	27,605	76%	40%	48%
Total	93,241	74%	35%	42%

Analysis by Main Feed Material

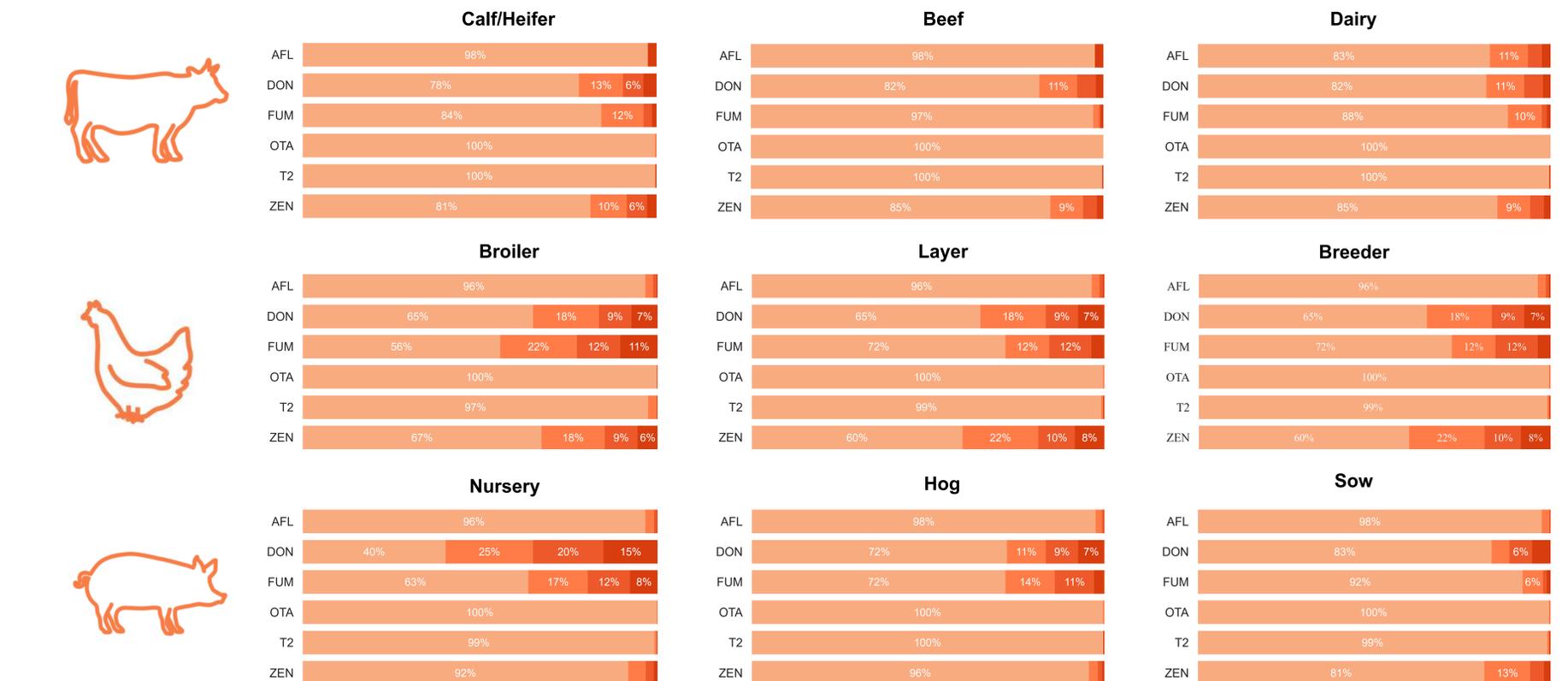
Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	19,379	58%	4%	4.7	544
DON	19,705	93%	73%	664.3	18,325
FUM	830	84%	58%	1,977.6	70,144
OTA	103	30%	1%	4.3	58
T2	109	67%	4%	10.5	60
ZEN	19,447	80%	44%	101.3	10,264

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	8,986	67%	10%	5.9	400
DON	10,353	77%	37%	255.4	4,300
FUM	158	24%	3%	193.2	1,299
OTA	109	20%	0%	1.5	4
T2	92	38%	1%	19.1	411
ZEN	5,132	62%	21%	37.5	2,886

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	1,820	61%	9%	7.1	109
DON	1,354	40%	21%	172.3	1,197
FUM	119	24%	3%	210.8	681
OTA	22	45%	0%	2.3	9
T2	70	37%	3%	11.6	34
ZEN	2,068	69%	32%	75.8	2,622

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	1,038	62%	4%	4.5	139
DON	749	89%	79%	1,337.6	12,274
FUM	69	67%	45%	1,348.9	7,006
OTA	30	47%	0%	2.3	5
T2	45	87%	4%	10.5	65
ZEN	723	88%	88%	313.4	4,212

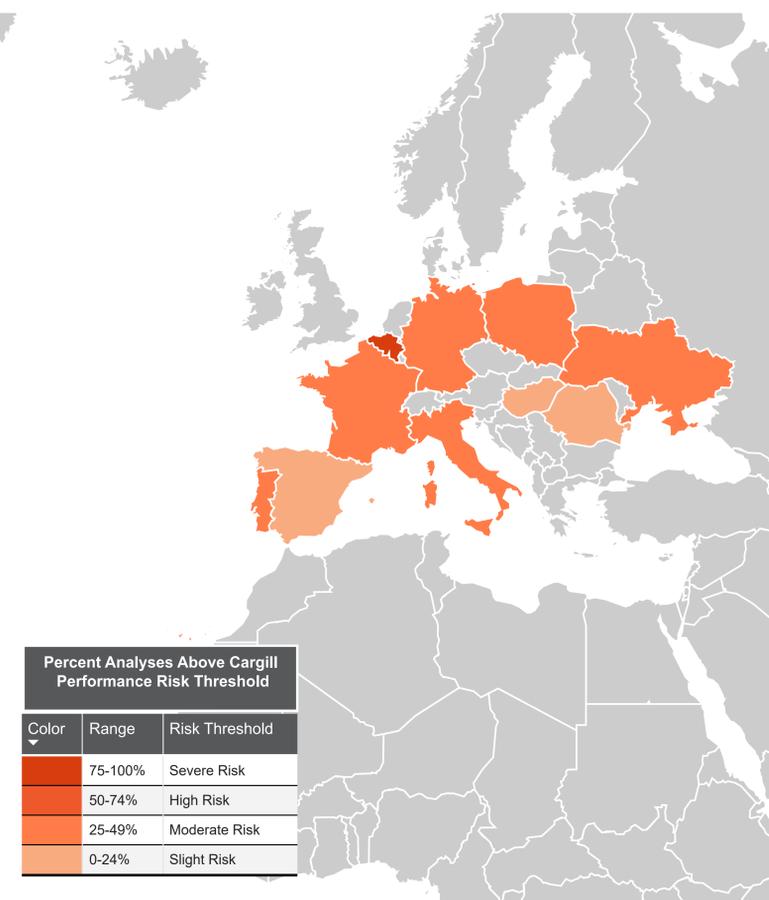
Cargill Performance Risk Level By Species**



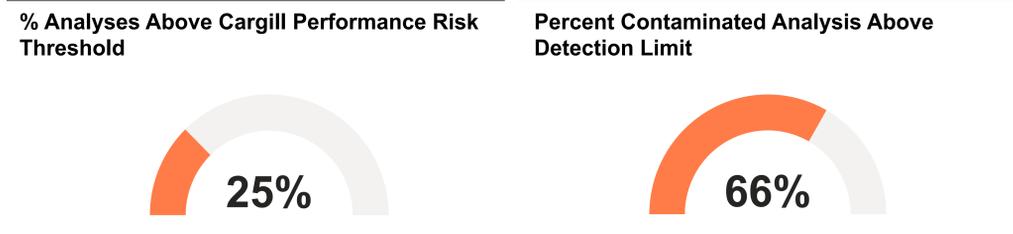
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Regional Data: Europe

Region: Europe Country: All Date: 1/1/2025 - 12/29/2025



Total Analysis: 59,115 Total Contaminated Analysis Above Detection Limit: 39,307



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	15,556	60%	2%	3%
DON	21,277	82%	42%	48%
FUM	5,402	55%	44%	34%
OTA	5,020	61%	0%	-
T2	5,166	42%	11%	13%
ZEN	6,694	64%	39%	35%
Total	59,115	66%	25%	27%

Analysis by Main Feed Material

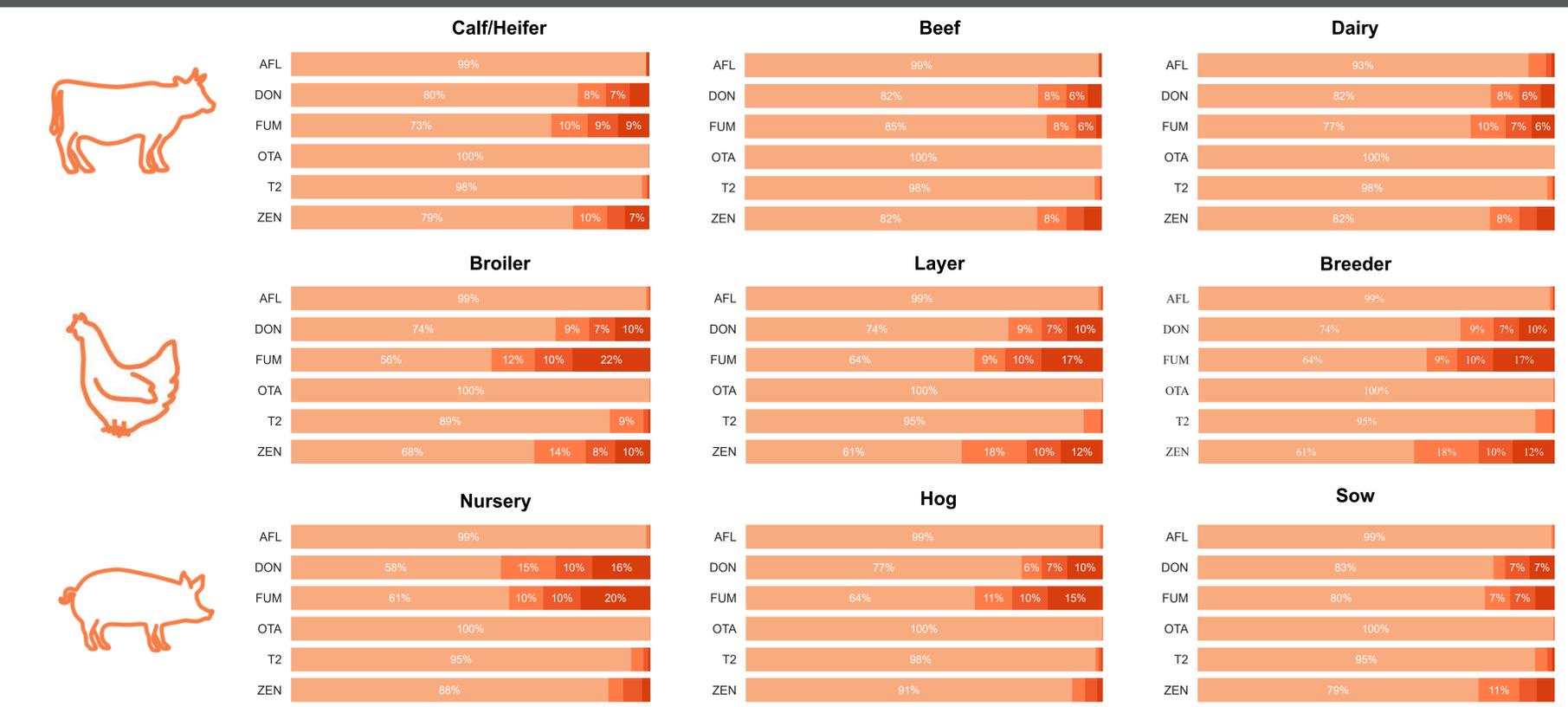
Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	8,989	63%	4%	3.7	297
DON	7,454	86%	58%	941.9	23,502
FUM	2,381	70%	55%	4,471.7	65,000
OTA	1,951	56%	0%	2.2	337
T2	2,061	44%	18%	44.1	2,520
ZEN	2,447	72%	43%	209.1	10,930

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	2,388	18%	0%	1.9	46
DON	10,319	82%	21%	179.3	19,481
FUM	1,036	4%	1%	2,090.5	60,400
OTA	1,094	33%	0%	1.7	106
T2	1,135	16%	6%	41.5	1,488
ZEN	2,060	23%	6%	33.0	1,000

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	534	28%	2%	5.4	160
DON	544	26%	3%	247.9	10,460
FUM	187	4%	0%	259.8	499
OTA	181	38%	0%	3.6	12
T2	175	10%	2%	30.5	221
ZEN	378	66%	32%	104.4	6,292

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	3,569	83%	1%	1.6	253
DON	2,883	87%	81%	1,648.0	22,925
FUM	1,781	71%	60%	3,164.3	59,540
OTA	1,777	87%	0%	2.1	474
T2	1,777	59%	8%	16.5	443
ZEN	1,740	99%	77%	163.2	4,246

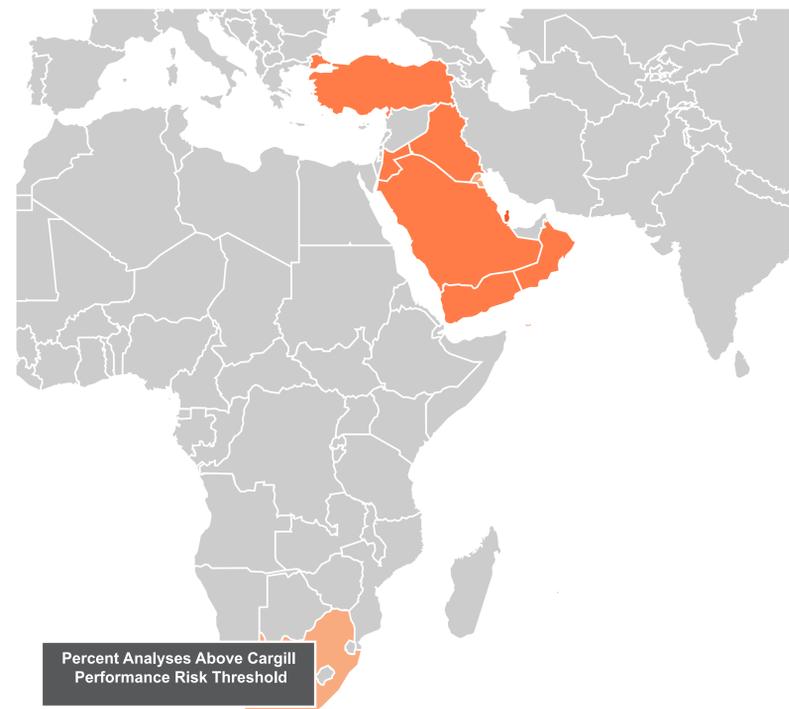
Cargill Performance Risk Level By Species**



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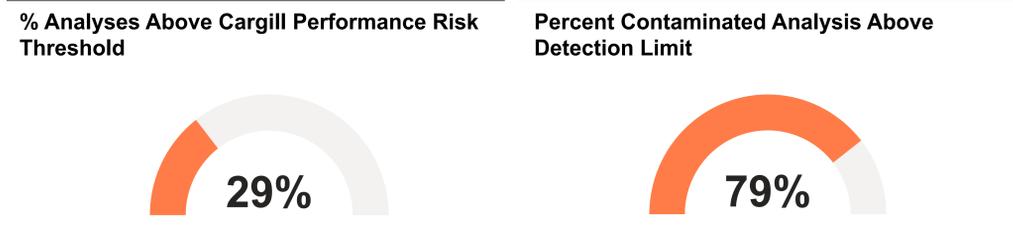
Regional Data: Middle East and Africa

Region: Middle E... Country: All Date: 1/1/2025 - 12/29/2025



Color	Range	Risk Threshold
Dark Orange	75-100%	Severe Risk
Orange	50-74%	High Risk
Light Orange	25-49%	Moderate Risk
Very Light Orange	0-24%	Slight Risk

Total Analysis: 10,267 Total Contaminated Analysis Above Detection Limit: 8,101



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	2,518	81%	12%	8%
DON	1,054	75%	12%	17%
FUM	1,561	80%	39%	33%
OTA	1,335	76%	0%	-
T2	1,336	72%	30%	31%
ZEN	2,463	83%	62%	43%
Total	10,267	79%	29%	23%

Analysis by Main Feed Material

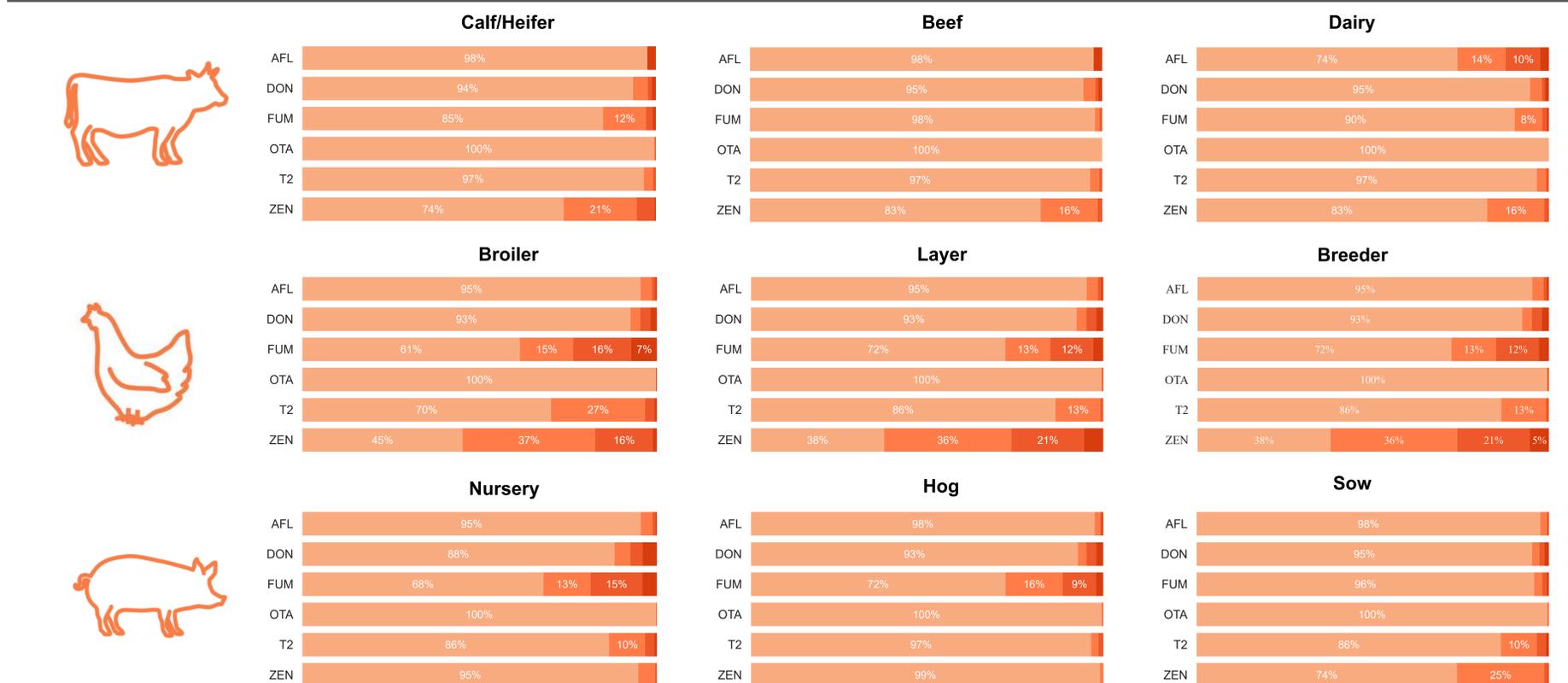
Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	1,173	74%	14%	6.7	238
DON	493	78%	23%	517.3	20,922
FUM	1,155	85%	52%	1,223.4	16,171
OTA	217	94%	0%	2.0	17
T2	898	68%	33%	39.8	257
ZEN	1,151	70%	38%	58.5	1,359

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	340	73%	6%	4.8	50
DON	86	84%	7%	106.3	932
FUM	229	58%	1%	97.1	808
OTA	185	84%	3%	5.2	156
T2	211	82%	36%	32.4	318
ZEN	238	73%	36%	49.1	355

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	997	92%	12%	4.8	33
DON	469	70%	1%	82.9	830
FUM	173	83%	1%	90.2	1,045
OTA	930	70%	0%	2.5	15
T2	223	79%	12%	20.8	78
ZEN	1,071	99%	93%	111.3	558

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	6	0%	0%	-	-
DON	4	100%	100%	779.9	1,476
FUM	3	0%	0%	-	-
OTA	2	50%	0%	1.5	2
T2	2	100%	50%	27.0	34
ZEN	2	100%	100%	92.8	102

Cargill Performance Risk Level By Species**



**Based on Cargill research, low, medium and high risk equate to an estimated 0.5%, 1% and 2% performance loss respectively

% Analyses Contaminated Within Cargill Performance Risk Thresholds: Minimum Low Medium High

Regional Data: North America

Region

North Am... ▾

Country

All ▾

Date

1/1/2025 📅 12/29/2025

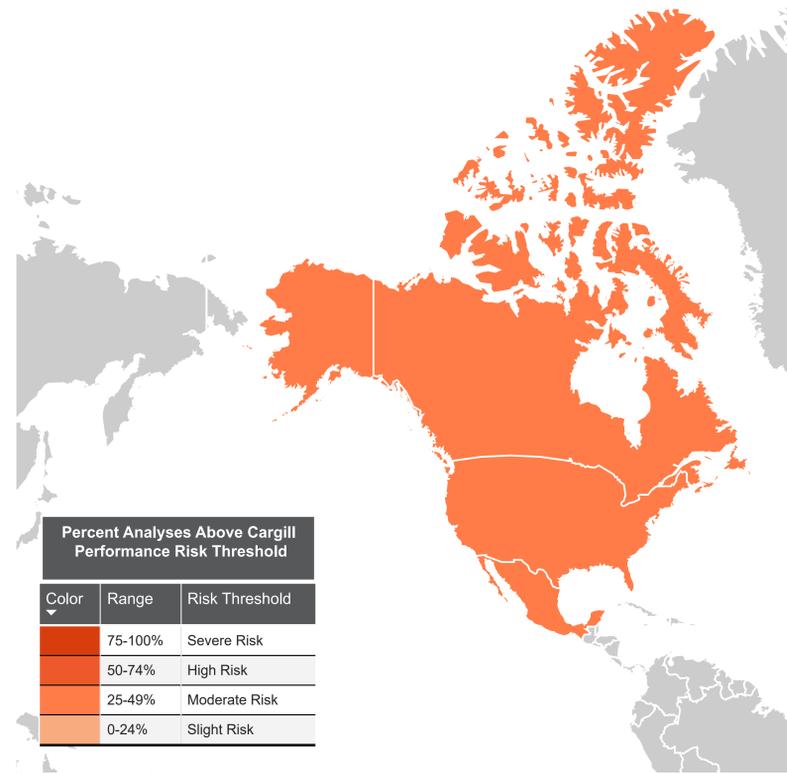
Total Analysis **127,651**

% Analyses Above Cargill Performance Risk Threshold



Total Contaminated Analysis Above Detection Limit **84,254**

Percent Contaminated Analysis Above Detection Limit



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	39,245	52%	3%	4%
DON	45,055	74%	60%	62%
FUM	31,836	79%	45%	40%
OTA	1,096	41%	2%	3%
T2	3,419	29%	16%	16%
ZEN	7,000	57%	47%	42%
Total	127,651	66%	37%	36%

Analysis by Main Feed Material

Icon	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
	AFL: 29,681	59%	3%	4.2	288
	DON: 29,813	70%	55%	1,069.3	20,000
	FUM: 28,825	82%	49%	1,579.3	66,900
	OTA: 261	30%	1%	81.9	3,800
	T2: 989	28%	17%	44.2	1,061
	ZEN: 3,522	70%	62%	145.6	6,461

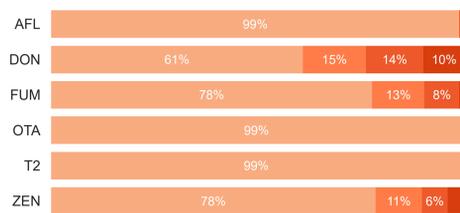
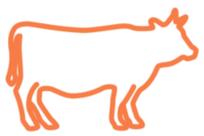
Icon	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
	AFL: 2,140	62%	1%	2.6	333
	DON: 12,259	85%	73%	1,079.3	24,010
	FUM: 1,088	69%	15%	370.1	4,000
	OTA: 381	38%	3%	26.7	1,500
	T2: 453	77%	51%	47.7	3,700
	ZEN: 1,319	48%	36%	119.1	4,700

Icon	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
	AFL: 2,174	65%	15%	12.1	428
	DON: 329	69%	20%	183.9	1,402
	FUM: 325	65%	22%	510.2	4,711
	OTA: 188	57%	3%	46.8	2,400
	T2: 277	82%	39%	30.9	495
	ZEN: 349	95%	69%	98.0	982

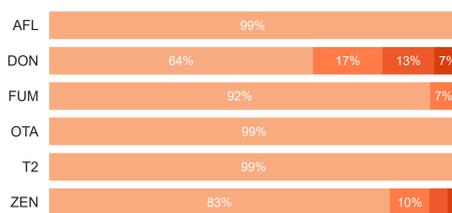
Icon	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
	AFL: 5,116	5%	0%	2.8	30
	DON: 2,405	64%	63%	2,331.5	20,221
	FUM: 1,443	19%	7%	821.9	10,970
	OTA: 228	37%	0%	3.4	13
	T2: 1,656	6%	1%	13.4	93
	ZEN: 1,685	27%	18%	277.8	10,779

Cargill Performance Risk Level By Species**

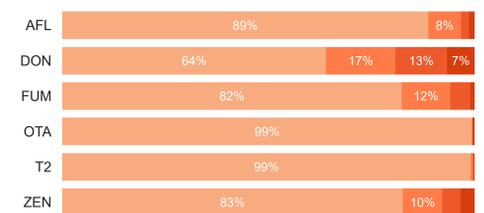
Calf/Heifer



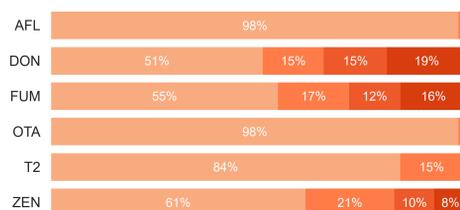
Beef



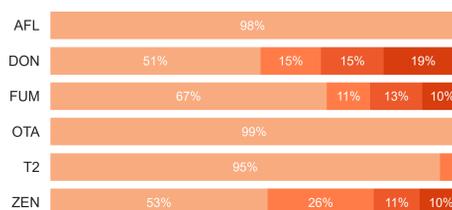
Dairy



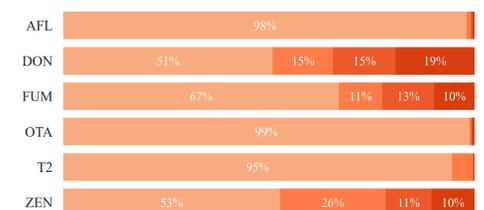
Broiler



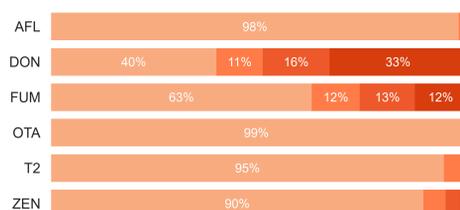
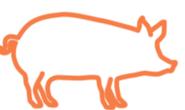
Layer



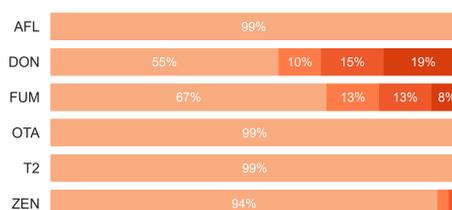
Breeder



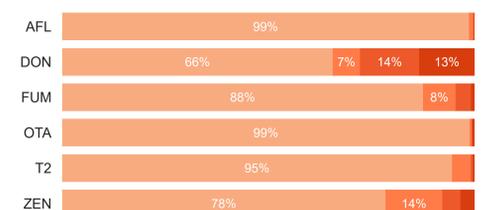
Nursery



Hog



Sow



**Based on Cargill research, low, medium and high risk equate to an estimated 0.5%, 1% and 2% performance loss respectively

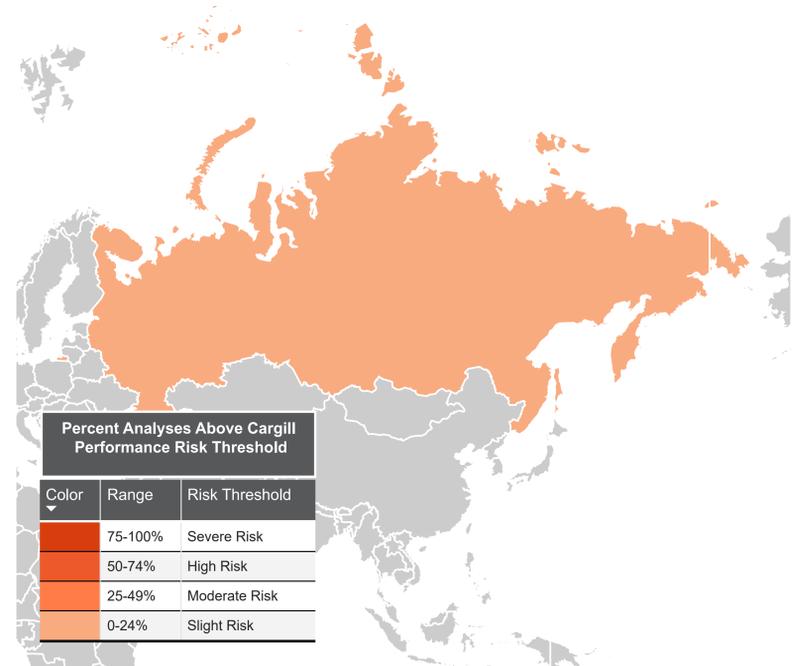
% Analyses Contaminated Within Cargill Performance Risk Thresholds: Minimum Low Medium High

Regional Data: Russia

Region: Russia Country: All Date: 1/1/2025 - 12/29/2025

Total Analysis: 8,232 Total Contaminated Analysis Above Detection Limit: 3,172

% Analyses Above Cargill Performance Risk Threshold: 14% Percent Contaminated Analysis Above Detection Limit: 39%



Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	% Contaminated Above Cargill Performance Risk Threshold - Same Period Last Year
AFL	1,690	51%	5%	2%
DON	1,403	8%	5%	22%
FUM	474	29%	13%	10%
OTA	1,410	63%	1%	1%
T2	1,777	43%	36%	55%
ZEN	1,478	27%	22%	19%
Total	8,232	39%	14%	20%

Analysis by Main Feed Material

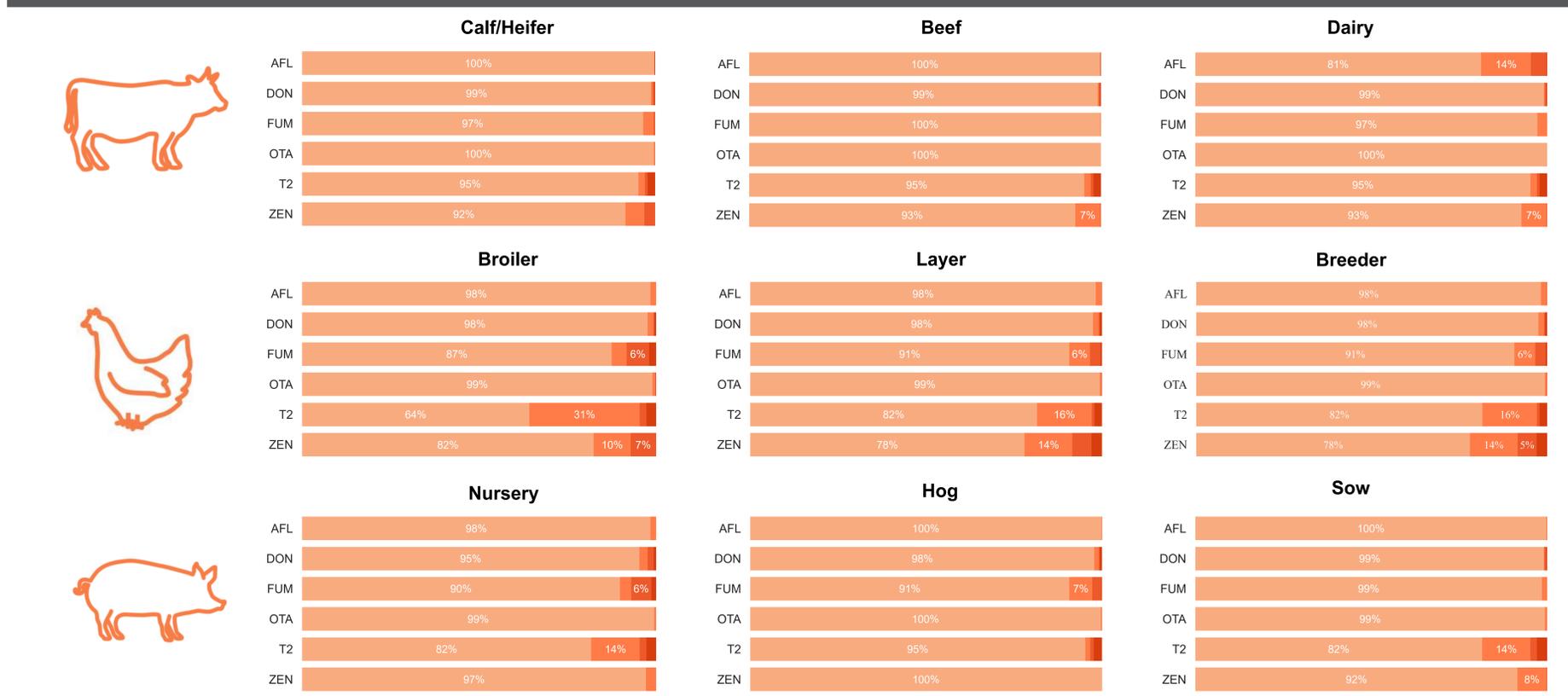
Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	286	44%	9%	6.4	112
DON	209	13%	11%	518.7	3,231
FUM	197	53%	30%	1,058.1	4,402
OTA	199	60%	4%	6.0	105
T2	335	62%	59%	128.8	623
ZEN	222	28%	14%	38.9	199

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	942	60%	0%	3.8	10
DON	839	4%	4%	572.8	3,544
FUM	95	4%	0%	75.0	75
OTA	830	70%	0%	2.3	14
T2	1,087	43%	35%	52.8	551
ZEN	839	7%	5%	52.1	199

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	344	44%	15%	7.4	21
DON	289	11%	0%	75.5	91
FUM	116	25%	0%	75.0	75
OTA	315	58%	3%	5.9	55
T2	287	25%	14%	33.4	87
ZEN	352	65%	63%	123.7	322

Toxin	Total Analyses	% Contaminated Analyses Above Detection Limit	% Contaminated Above Cargill Performance Risk Threshold	Average contamination (ppb)	Maximum Result (ppb)
AFL	68	3%	0%	3.6	4
DON	34	35%	35%	768.5	1,769
FUM	34	0%	0%	-	-
OTA	34	6%	0%	3.7	4
T2	34	53%	50%	142.7	740
ZEN	34	100%	56%	48.7	120

Cargill Performance Risk Level By Species**



**Based on Cargill research, low, medium and high risk equate to an estimated 0.5%, 1% and 2% performance loss respectively. % Analyses Contaminated Within Cargill Performance Risk Thresholds: Minimum, Low, Medium, High

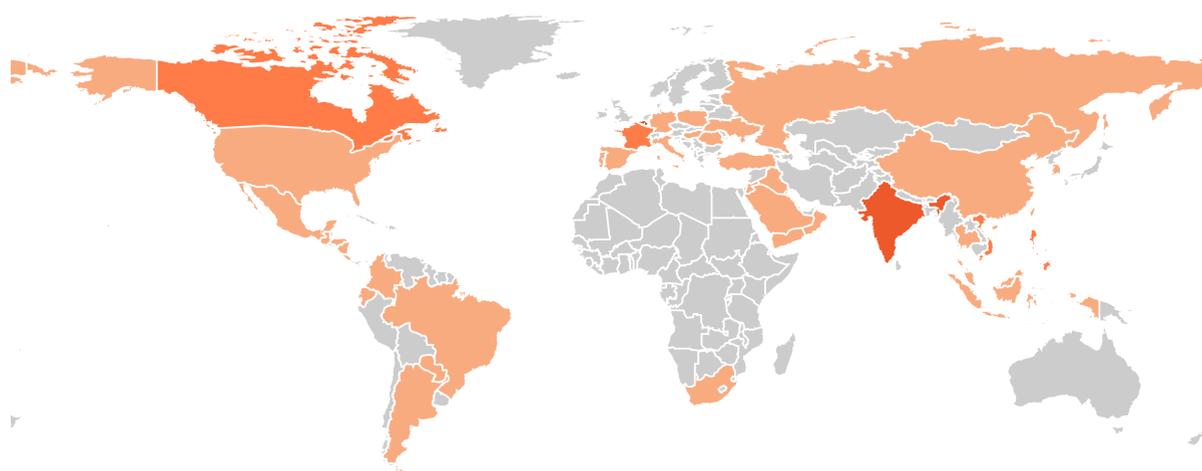
Ruminant Global and Regional Mycotoxin Risk

Date

1/1/2025



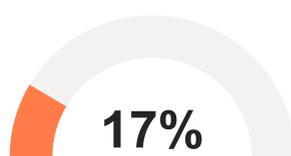
12/29/2025



Percent Analyses Above Cargill Performance Risk Threshold (Calf/Heifer)

Color	Range	Risk Threshold
Dark Orange	75-100%	Severe Risk
Medium Orange	50-74%	High Risk
Light Orange	25-49%	Moderate Risk
Very Light Orange	0-24%	Slight Risk

% Analyses Contaminated Above Ruminant Performance Risk Threshold (Calf/Heifer)



Toxin	Total Analyses	% Analyses Contaminated Above Calf/Heifer Performance Threshold	% Analyses Contaminated Above Beef Performance Threshold	% Analyses Contaminated Above Dairy Performance Threshold
AFL	124,383	9%	9%	23%
DON	115,012	27%	24%	24%
FUM	53,850	22%	7%	17%
OTA	16,950	0%	0%	0%
T2	20,800	1%	1%	1%
ZEN	58,931	19%	15%	15%

Percent Analyses Above Cargill Performance Risk Threshold

Asia	Percent Above	Central & South America	Percent Above	China	Percent Above	Europe	Percent Above	Middle East & Africa	Percent Above	North America	Percent Above	Russia	Percent Above
AFL	41%	AFL	5%	AFL	2%	AFL	1%	AFL	2%	AFL	1%	AFL	0%
DON	15%	DON	17%	DON	22%	DON	20%	DON	6%	DON	39%	DON	1%
FUM	13%	FUM	23%	FUM	16%	FUM	27%	FUM	15%	FUM	22%	FUM	3%
OTA	1%	OTA	0%	OTA	0%	OTA	0%	OTA	0%	OTA	1%	OTA	0%
T2	1%	T2	0%	T2	0%	T2	2%	T2	3%	T2	1%	T2	5%
ZEN	16%	ZEN	16%	ZEN	19%	ZEN	21%	ZEN	26%	ZEN	22%	ZEN	8%

Mycotoxin Multiple Mycotoxin Impact on Ruminants

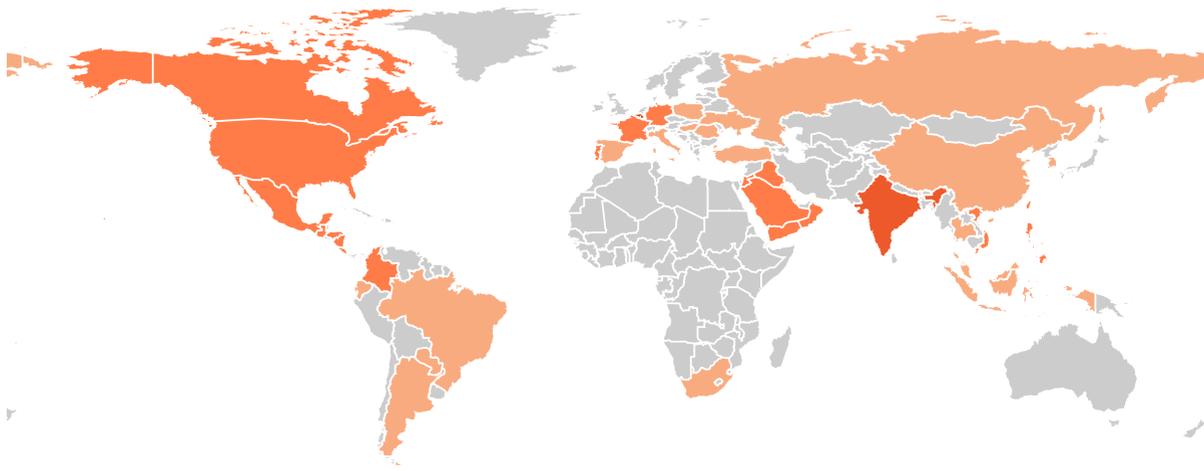
AFL	<ul style="list-style-type: none"> AFL is poorly metabolized in the rumen and reduces ingestion, immunity, and reproduction and alters hepatic activity. Clinical symptoms include liver damage, depression, anorexia, lameness, rough hair coat, dry skin and rectum prolapse. Aflatoxin M1 (AFL metabolite) is excreted into the milk.
FUM	<ul style="list-style-type: none"> FUM is poorly degraded in the rumen and leads to decreased appetite, reducing milk production and reproduction and causing growth delays. FUM is particularly toxic to the liver and kidneys and can lead to lethargy
OTA	<ul style="list-style-type: none"> In adults, OTA is well metabolized in the rumen. In underperforming rumen or in high contamination scenarios, OTA leads to anorexia, diarrhea, and impaired performance. In calves, it causes depression, lower growth, excessive urine production, dehydration and negative impact on the kidneys and immune system.
T2	<ul style="list-style-type: none"> Clinical signs of T2 are bloody diarrhea and reduced feed intake and reproductive performance. It is also associated with gastroenteritis, lesions and hemorrhages in the gastrointestinal tract and death. At low levels, T2 changes metabolism and immunity leading to lower performance.
DON	<ul style="list-style-type: none"> DON impairs the rumen, altering pH, decreasing microbial protein synthesis and a decline in cellulolytic bacteria. DON also affects metabolism and immunity. DON causes gastrointestinal problems, diarrhea, and overall performance decrease.
ZEN	<ul style="list-style-type: none"> In the rumen, ZEN is mostly converted to α-zearalenol, a more osteogenic metabolite. ZEN induces milk production loss, low conception rate, decrease in embryo survival, changes in reproductive organ morphology, abnormal mammary development, reproductive hormone decrease, feminization of young males, and infertility.

Poultry Global and Regional Mycotoxin Risk

Date

1/1/2025

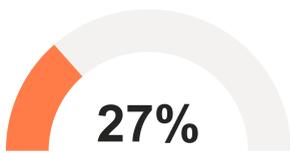
12/29/2025



Percent Analyses Above Cargill Performance Risk Threshold (Broiler)

Color	Range	Risk Threshold
Dark Orange	75-100%	Severe Risk
Orange	50-74%	High Risk
Light Orange	25-49%	Moderate Risk
Very Light Orange	0-24%	Slight Risk

% Analyses Contaminated Above Poultry Performance Risk Threshold (Broiler)



Toxin	Total Analyses	% Analyses Contaminated Above Broiler Performance Threshold	% Analyses Contaminated Above Breeder Performance Threshold	% Analyses Contaminated Above Layer Performance Threshold
AFL	124,383	11%	11%	11%
DON	115,012	37%	37%	37%
FUM	53,850	48%	34%	34%
OTA	16,950	1%	0%	0%
T2	20,800	14%	6%	6%
ZEN	58,931	35%	43%	43%

Percent Analyses Above Cargill Performance Risk Threshold

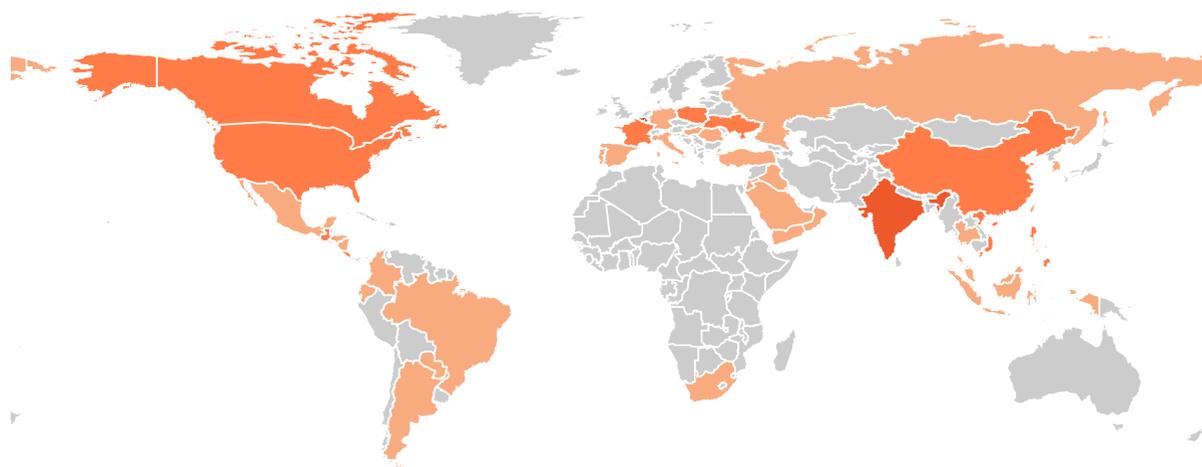
Region	Toxin	Percent Above	Region	Toxin	Percent Above	Region	Toxin	Percent Above	Region	Toxin	Percent Above	Region	Toxin	Percent Above					
Asia	AFL	51%	Central & South America	AFL	6%	China	AFL	4%	Europe	AFL	1%	Middle East & Africa	AFL	5%	North America	AFL	2%		
	DON	18%		DON	27%		DON	35%		DON	26%		DON	7%		DON	49%	DON	2%
	FUM	35%		FUM	64%		FUM	44%		FUM	44%		FUM	39%		FUM	45%	FUM	13%
	OTA	2%		OTA	1%		OTA	0%		OTA	0%		OTA	0%		OTA	2%	OTA	1%
	T2	8%		T2	9%		T2	3%		T2	11%		T2	30%		T2	16%	T2	36%
ZEN	27%	ZEN	39%	ZEN	33%	ZEN	32%	ZEN	55%	ZEN	39%	ZEN	18%						

Mycotoxin	Multiple Mycotoxin Impact on Poultry
AFL	<ul style="list-style-type: none"> AFL targets the liver and the immune system. Main symptoms are performance loss (i.e., weight loss, low feed efficiency, reduced egg production, and egg weight), greater disease susceptibility, and lower vaccination efficacy. The liver can also be damaged, and organ weight drastically modified. Carcass bruising and poor pigmentation are common symptoms.
FUM	<ul style="list-style-type: none"> FUM causes disruption of sphingolipid metabolism. FUM is poorly absorbed which greatly exposes and disrupts the digestive tract, leading to diarrhea and severe performance loss. The liver and immune system are common targets
OTA	<ul style="list-style-type: none"> OTA targets the kidneys (neurotoxin) to cause an increase in water consumption. Then it causes a sharp decrease in consumption, growth, egg production, and eggshell quality. Weakens the immune response therefore impacting overall bird health.
T2	<ul style="list-style-type: none"> T2 is very problematic and causes visible oral mucosa and digestive tract lesions. T2 can reduce nutrient absorption and impact performance (weight, egg production, size) and disrupt the immune system and cause abnormal feathering.
DON	<ul style="list-style-type: none"> DON degrades normal intestine function causing a decrease in nutrient absorption and intestine wall permeability. Causes diarrhea and impacts animal performance. DON decreases immunity, making vaccines less effective and animals more susceptible to disease. It is a predisposing factor for necrotic enteritis.
ZEN	<ul style="list-style-type: none"> ZEN has a similar structure to the hormone estrogen. Consequences in reproduction, including reduced fertility and egg hatchability, and eggshell quality decrease. ZEN can also cause ovarian cysts or cloaca enlargement. Reduces growth performance, especially when it is accompanied by other mycotoxins

Swine Global and Regional Mycotoxin Risk

Date

1/1/2025  12/29/202



Percent Analyses Above Cargill Performance Risk Threshold(Nursery)		
Color	Range	Risk Threshold
■	75-100%	Severe Risk
■	50-74%	High Risk
■	25-49%	Moderate Risk
■	0-24%	Slight Risk

% Analyses Contaminated Above Swine Performance Risk Threshold (Nursery)



Toxin	Total Analyses	% Analyses Contaminated Above Sow Performance Threshold	% Analyses Contaminated Above Hog Performance Threshold	% Analyses Contaminated Above Nursery Performance Threshold
AFL	124,383	9%	9%	11%
DON	115,012	23%	32%	53%
FUM	53,850	12%	34%	39%
OTA	16,950	0%	0%	0%
T2	20,800	6%	1%	6%
ZEN	58,931	19%	5%	8%

Percent Analyses Above Cargill Performance Risk Threshold

Asia	Percent Above	Central & South America	Percent Above	China	Percent Above	Europe	Percent Above	Middle East & Africa	Percent Above	North America	Percent Above	Russia	Percent Above
AFL	51%	AFL	6%	AFL	4%	AFL	1%	AFL	5%	AFL	2%	AFL	2%
DON	27%	DON	42%	DON	60%	DON	42%	DON	12%	DON	60%	DON	5%
FUM	29%	FUM	52%	FUM	37%	FUM	39%	FUM	32%	FUM	37%	FUM	10%
OTA	1%	OTA	0%	OTA	0%	OTA	0%	OTA	0%	OTA	1%	OTA	1%
T2	2%	T2	2%	T2	1%	T2	5%	T2	14%	T2	5%	T2	18%
ZEN	9%	ZEN	5%	ZEN	8%	ZEN	12%	ZEN	5%	ZEN	10%	ZEN	3%

Mycotoxin	Multiple Mycotoxin Impact on Swine
AFL	<ul style="list-style-type: none"> Low AFL doses result in lower feed intake, growth rate, and vaccination response which can affect liver function and immunity. Nursery pigs are most susceptible as AFL passes through milk. Acute aflatoxicosis can lead to hemorrhages, jaundice, and sudden death.
FUM	<ul style="list-style-type: none"> FUM impacts the lungs, heart, and liver tissues. Acute toxicity causes porcine pulmonary edema resulting in respiratory symptoms, cyanosis, and often, death. Chronic toxicity causes lower feed intake, growth rate, vaccination response, and muscle bleeding
OTA	<ul style="list-style-type: none"> OTAA is toxic for kidneys and liver and undermines immunity. Significant poisoning results in higher mortality. OTA can cause low growth rate, poor feed efficiency, and altered urine.
T2	<ul style="list-style-type: none"> T2 is a strong immunosuppressive toxin with effects at low doses. Acute exposure causes liver/intestinal bleeds and chronic toxicity causes lower feed intake and weight loss. T2 can cause reproductive issues, abnormalities, or birth defects.
DON	<ul style="list-style-type: none"> DON impacts protein synthesis and immunity and disrupts neurotransmitter activity. Low dose exposure leads to feed consumption and growth performance decreases. Severe exposure causes vomiting, diarrhea, digestive lesions, and sudden death.
ZEN	<ul style="list-style-type: none"> ZEN impacts reproduction and can cause vulva swelling/redness and rectal/vaginal prolapses. False pregnancy and early embryo loss may occur. ZEN passes through milk and impacts newborns. ZEN lowers growth performance severely when combined with other toxins.

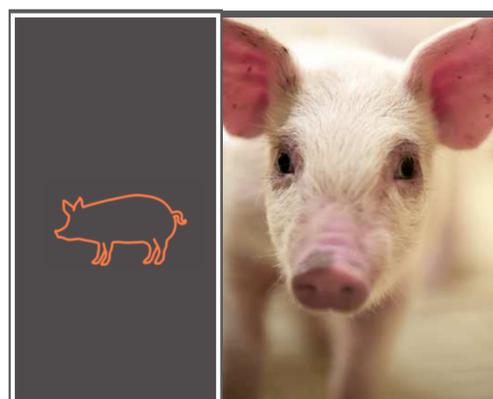
Cargill Performance Risk Thresholds (ppb)



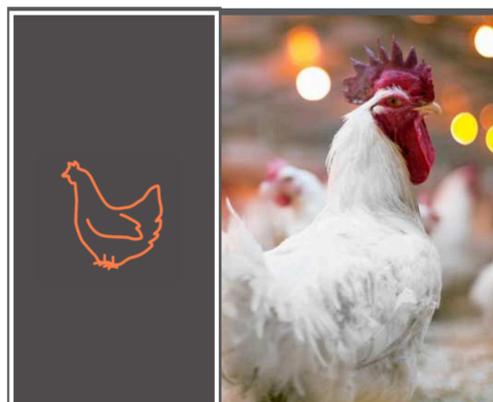
	AFL	DON	FUM	OTA	T2	ZEN
Global	10	200	500	20	25	35



	AFL	DON	FUM	OTA	T2	ZEN
Beef	20	700	4,000	250	100	125
Calf/Heifer	20	600	1,750	50	100	100
Dairy	5	700	2,250	250	100	125



	AFL	DON	FUM	OTA	T2	ZEN
Grower/Finisher	20	500	1,000	40	100	300
Nursery pig	15	200	750	25	50	200
Sow	20	750	3,000	25	50	100



	AFL	DON	FUM	OTA	T2	ZEN
Breeder	15	400	1,000	25	50	35
Broiler	15	400	500	20	25	50
Layer	15	400	1,000	25	50	35

Disclaimer: These thresholds may differ from government regulatory levels which vary from one country to another. Cargill Animal Nutrition mycotoxin risk thresholds have been established through in-depth scientific research on the mycotoxin impact on animals' health and performance and are based on an estimated 0.5% loss of performance. These thresholds are likely to evolve as scientific knowledge on mycotoxicosis increases.

We would like to thank our customers, technicians throughout our vast laboratory network, and data scientists, without which this report would not be possible.

Have questions or want to get in touch ?

Please reach out to mycotoxins@cargill.com.

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Health Solutions