

TABLE 23: MYCOTOXIN RESULTS - MAIZE CROP QUALITY 2022/23

Region	Colour maize	Aflatoxin µg/kg					Fumonisin µg/kg					DON µg/kg					15-ADON µg/kg			Ochratoxin A µg/kg			Zearalenone µg/kg			HT-2 µg/kg			T-2 µg/kg		
		B ₁		B ₂		G ₁	G ₂	Total		B ₁		B ₂		B ₃	Total	LOC: 100 µg/kg		LOQ: 100 µg/kg		LOQ: 5 µg/kg		LOQ: 20 µg/kg		LOD: 20 µg/kg		LOD: 20 µg/kg		LOQ: 20 µg/kg		LOD: 20 µg/kg	
		LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOD: 20 µg/kg	LOD: 20 µg/kg	LOQ: 20 µg/kg	LOD: 20 µg/kg	LOQ: 20 µg/kg	LOD: 20 µg/kg		
6	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	241	<100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	108	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	195	<100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	147	279	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	600	161	42	803	241	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 348	598	181	3 127	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	226	64	<20	290	642	106	ND	ND	ND	ND	ND	ND	ND	ND	ND	
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	<20	ND	60	287	109	ND	ND	ND	ND	ND	ND	ND	ND	ND	
10	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
11	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
11	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
11	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
11	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
11	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
11	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	57	<20	ND	57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
12	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<20	ND	<20	ND	<100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
13	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<20	ND	<20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

TABLE 23: MYCOTOXIN RESULTS - MAIZE CROP QUALITY 2022/23 (continue)

Region	Colour maize	Fumonisin µg/kg										DON µg/kg	15-ADON µg/kg	Ochratoxin A µg/kg	Zearalenone µg/kg	HT-2 µg/kg	T-2 µg/kg
		B ₁			B ₂			G ₁			Total						
		LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 5 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOQ: 20 µg/kg	LOC: 100 µg/kg	LOC: 100 µg/kg	LOC: 5 µg/kg	LOC: 20 µg/kg	LOC: 20 µg/kg	ND	ND
13	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	112	ND	ND	ND	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1243	245	ND	30	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	135	ND	ND	ND	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	132	ND	ND	ND	ND
13	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
13	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1569	249	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	146	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<100	ND	ND	ND	ND
14	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	208	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
14	Y	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
15	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
16	W	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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		B ₁		B ₂		G ₁	G ₂		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁		B ₂		B ₃	Total		B ₁

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Note:

limit of quantitation (LQ) means the lowest concentration level that can be quantified with acceptable precision and accuracy by the LC-MS/MS.

A concentration measured below the LOQ is reported as <LOQ.

Limit of detection (LOD) is the lowest concentration level that can

A concentration measured below the LOD is reported as not detected (ND).

$\text{Hg}/\text{kg} = 888$ (parts per billion)

TABLE 24: MYCOTOXIN RESULTS - SUMMARY OF SEASONS 2013/14 TO 2022/23

Season	Total Number of samples represented in crop survey	Number of samples tested for mycotoxins	Aflatoxin* µg/kg	Fumonisin** µg/kg	Deoxynivalenol µg/kg	15-acetyl-deoxynivalenol µg/kg	Ochratoxin A µg/kg	Zearalenone µg/kg	T-2 Toxin µg/kg												
2013/14	930	350	-	143	456	5 357	243	417	6 134	59	182	861	-	-	41	78	445	-	-		
2014/15	1 000	350	3	31	48	197	397	3 382	143	447	9 736	37	251	1 768	-	-	37	60	337	-	-
2015/16	920	350	-	-	200	569	11 347	75	259	1 585	7	163	310	-	-	-	17	49	127	-	-
2016/17	1 000	350	-	-	155	431	6 059	129	919	7 698	56	254	964	-	-	-	27	89	399	-	-
2017/18	900	350	-	-	154	554	8 356	204	676	3 510	64	163	394	-	-	-	28	61	361	-	-
2018/19	808	350	1	143	143	151	689	34 740	237	627	11 181	62	218	737	-	-	36	98	957	-	-
2019/20	890	350	1	10	121	413	5 928	299	768	7 700	120	238	1 173	-	-	-	44	70	539	-	-
2020/21	1 000	350	-	-	76	459	5 373	225	434	3 256	63	176	571	-	-	-	9	38	101	-	-
2021/22	1 000	350	-	-	55	709	18 301	290	749	6 879	107	211	1 115	-	-	-	57	58	428	2	29
2022/23	1 000	350	-	-	48	297	3 127	127	320	2 205	15	176	379	-	-	-	12	78	328	-	-
Total	9 448	3 500	5	1 300	1 972	590	-	590	-	308	2	-	308	2	-	2	29	29	29	30	30
Weighted ave.			49	501	596	211	-	-	-	70	-	-	-	70	-	-	70	-	-	-	-
Max.			143	34 740	11 181	1 768	-	-	-	957	-	-	-	957	-	-	957	-	-	-	-

* Sum of Aflatoxin (B₁; B₂; G₁; G₂)

**Sum of Fumonisin (B₁; B₂; B₃)

N = number of positive results

Mycotoxin methodology

During 2010 SAGL implemented a multi-mycotoxin screening method using UPLC-MS/MS. The following limit of detection applies for each toxin:

Mycotoxin	LOQ for maize µg/kg	LOD for maize µg/kg
Aflatoxin B ₁	5	2.5
Aflatoxin B ₂	5	2.5
Aflatoxin G ₁	5	2.5
Aflatoxin G ₂	5	2.5
Fumonisin B ₁	20	10
Fumonisin B ₂	20	10
Fumonisin B ₃	20	10
Deoxynivalenol	100	50
15-ADON	100	50
Ochratoxin A	5	2.5
Zearalenone	20	10
T - 2 Toxin	20	10

Note:

Limit of quantitation (LOQ) means the lowest concentration level that can be quantified with acceptable precision and accuracy by the LC-MS/MS.
 Limit of detection (LOD) is the lowest concentration level that can be detected but not quantified and is 50% of the LOQ of each mycotoxin.
 µg/kg = ppb (parts per billion)