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SAGL REPORT ON 2023– 2024 MAIZE POST STORAGE QUALITY STATUS

PROJECT FUNDED BY THE MAIZE TRUST

PROJECT:

MYCOTOXIN LEVELS ON POST STORAGE MAIZE

IN THE 2023-2024 PROCESSING SEASON

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1. Summary

Multi-mycotoxin analyses on pre-processing maize have been conducted annually since 2015 and the annual reports include results for aflatoxins, fumonisins, deoxynivalenol and 15-acetyl deoxynivalenol, zearalenone, T-2 Toxin, HT-2 toxin and ochratoxin A. This season, diplodiatoxin, an emerging mycotoxin in maize, was included in the multi-mycotoxin analyses for the second time.

The South African millers and animal feed processors collected 151 white and 198 yellow maize samples at their processing plants during three sampling cycles between November 2023 and July 2024 for multi-mycotoxin analyses with UPLC-MS/MS. This is the ninth consecutive processing season (2023-2024) that the Maize Trust approved the funding for this project. The primary objective is to gain insight in the mycotoxin occurrence, concentration levels and seasonal variations in maize at the pre-processing stage of the food and feed value chain.

Consistent with previous survey findings, none of the white and yellow maize samples contained HT-2 toxin, T-2 toxin or ochratoxin A. Aflatoxin B_1 (AFB_1) and aflatoxin G_1 were detected in only one white maize sample this season, an unusual occurrence as aflatoxin contamination is rarely observed in commercially produced maize within South Africa. The concentrations were however below the limit of quantitation (LOQ) of 5 µg/kg. Aflatoxin B_1 was previously detected in two white maize samples and one yellow maize sample during the initial project year (2015-2016). In the 2016-2017 season, AFB_1 was found in two imported white maize samples among the 39 imported maize samples submitted for analysis.

Fumonisin B_1, B_2 and B_3 (FUM total = FB_1 + FB_2 + FB_3) were detected in 34% white maize and 29% yellow maize in 2023-2024, compared to 28% white and 25% yellow maize in the previous processing season. Deoxynivalenol (DON) was detected in 34% white maize samples and 40% yellow maize samples in this season. This represents a decrease compared to the previous season, where DON was found in 77% white maize and 69% yellow maize samples. 15-Acetyl deoxynivalenol (15-ADON) was detected in 2% white maize and 4% yellow maize samples and zearalenone (ZON) in 8% white maize and 6% yellow maize samples.

The average FUM concentration in white maize decreased from 876 µg/kg in 2016-2017 to 109 µg/kg in 2023-2024. The maximum FUM concentrations observed in individual white maize samples over the past seven production seasons remained below the 4000 µg/kg maximum allowable concentration (FB_1+ FB_2) specified in the SA Mycotoxin Regulation in maize intended for processing for human consumption [(3)]. In contrast with white maize, higher maximum FUM concentrations were reported in individual yellow maize samples. During the 2023-2024 season, these maximum concentrations reached 1244 µg/kg in cycle 1, 6024 µg/kg in cycle 2, and 1981 µg/kg in cycle 3. This trend of higher FUM concentrations in yellow maize compared to white maize was consistently observed in all nine seasons in individual maize samples.

The average DON concentration in white maize during this season was 255 µg/kg, comparable to the average concentrations reported in the first 3 years of the monitoring project (2015 to 2018). The highest average DON concentration (957 µg/kg) was reported in the 2018 -2019 season. The maximum DON concentrations in individual white maize samples this season were 568 µg/kg in cycle 1, 976 µg/kg in cycle 2 and 464 µg/kg in cycle 3. These concentrations remained below the 2000 µg/kg maximum allowable DON concentration in maize intended for processing for human consumption as specified in the SA Mycotoxin Regulation[(3)]. In contrast, approximately 9% of the white maize samples in cycle 1 and 16% in cycle 2 of the previous season (2022-2023) exceeded the 2000 µg/kg allowable concentration for DON. The highest DON concentration (5506 µg/kg) in a single white maize sample was collected in the 2019-2020 season.

The average DON concentration in yellow maize this season was 265 µg/kg, slightly less compared to the previous four seasons. The highest DON concentration in a single yellow maize sample this season was 1822 µg/kg. This represents a decrease in DON concentrations compared to the previous season, where 6.8% of the yellow maize samples collected in cycle 1 and 1.5% of the samples in cycle 2 had DON concentrations higher than 2000 µg/kg.

The average ZON concentrations in white maize over the past four seasons were approximately 40 µg/kg. The average ZON concentration in yellow maize this season was 85 µg/kg. One yellow maize sample contained 390 µg/kg ZON, the second highest concentration found in an individual maize sample since the survey started in 2015-2016.

Diplodiatoxin (D-Toxin) was found in 23% of the white maize samples and in 43% of the yellow maize samples. The average concentration in white maize was 91 µg/kg, while the average concentration in yellow maize was 189 µg/kg. The highest concentration in a sample was 2361 µg/kg in a yellow maize sample from the Free State province.

When diplodiatoxin was first included in the multi-mycotoxin analyses in the 2020 -2021 season, it was detected in only 9% of the white maize samples and 6% of the yellow maize samples. Diplodiatoxin is the main toxin produced by *Stenocarpella Maydis* fungus infection [6]. Diplodiosis (a neurotoxic disease) was observed as early as 1911 in South Africa in cattle and sheep grazing on harvest maize fields with maize contaminated with this fungus [7, 8, 9]. The occurrence of diplodiatoxin in South African produced maize collected at harvest was investigated for the first time in four production seasons from 2018 -2019 to 2021- 2022 [6].

The results of long-term monitoring of regulated mycotoxins in white and yellow maize at the pre-processing stage of the South African food and feed chain since 2015 has consistently demonstrated seasonal variations in the occurrence and concentrations of deoxynivalenol and its metabolite 15-ADON, as well as fumonisins (B_1, B_2, and B_3) and zearalenone [1]. The findings from the ninth annual survey provide invaluable insights into the levels of mycotoxins in raw maize to be processed at food and feed processing plants within the South African food and feed industry. This information allows maize processors to develop, implement and maintain effective strategies to mitigate mycotoxin contamination throughout the value chain.

2. Layout of Report

The mycotoxin results of the white maize samples (mainly for human consumption) and the yellow maize samples (all received from feed processing mills) are summarised in Section 3 **Mycotoxin Results and Trends**. The trends observed over the past nine processing seasons are illustrated in Section 3.

The samples received from the food and feed processing plants are summarised in Section 5 **Materials and Methods**. All the samples were analysed with the SAGL multi-mycotoxin UPLC-MS/MS method; a SANAS accredited method [5]. A summary of the SAGL in-house method and validation results are reported in Section 5.

The mycotoxin results of all the individual white maize and yellow maize samples are reported in two tables in Annexure A of this report. A unique code was allocated to each of the different processing mills that submitted samples and the results are grouped according to the processing mill code. The production regions or provinces provided are included in the result tables in Annexure A and illustrated on the map with RSA crop production regions in Annexure B.

The South African Regulations for specific mycotoxins in foodstuffs for human consumption [2,3] and in farm feed for animals [4] are summarised in Annexure C of this report.

3. Mycotoxin Results and Trends

The white maize mycotoxin results are summarised in Section 3.1, Table 1 and yellow maize in Section 3.2, Table 2. Fumonisin B_1 + B_2 concentrations are reported for comparison with the maximum allowable level described for fumonisins (B_1+B_2) in the SA Regulation for human consumption [3].

3.1 Mycotoxins in White Maize

All the participating food processing mills submitted 136 white maize samples. The suppliers of maize to both food and feed processing mills sent 14 white maize samples and 1 white maize sample was received from a feed processing mill. All the samples were collected from locally produced white maize (see more detail in Section 5). The number of samples per cycle and the average and maximum concentration levels of the most important mycotoxins are summarised in Table 1 and illustrated in Figure 1. The mean concentration of each mycotoxin was calculated as the average of the positive samples excluding results below the LOQs. The maximum concentrations reported in Table 1 were measured in individual samples tested in each of the three cycles.

Table 1 Mycotoxin contamination of white maize received in 2023 – 2024 for processing.

Mycotoxin	Afla B_1	FUM B_1 + FUM B_2	FUM total	DON	15-ADON	ZON	Diplodia toxin
Cycle number 1 (Nov 2023 -January 2024)							
Total number of samples analysed	61						
number of samples positive	0	17	17	23	2	6	12
% samples positive	0	28	28	38	3	10	20
Average of positive (µg/kg)	ND	72	72	269	107	31	101
Maximum (µg/kg)	ND	212	212	568	114	45	204
Cycle number 2 (March – April 2024)							
Total number of samples analysed	50						
number of samples positive	0	15	15	19	1	2	16
% samples positive	0	30	30	38	2	4	32
Average of positive (µg/kg)	ND	92	92	237	101	29	88
Maximum (µg/kg)	ND	292	292	976	101	37	184
Cycle number 3 (June – July 2024)							
Total number of samples analysed	40						
number of samples positive	0	20	20	9	0	4	7
% samples positive	0	50	50	23	0	10	18
Average of positive (µg/kg)	ND	149	153	258	ND	31	80
Maximum (µg/kg)	ND	496	524	464	ND	56	130

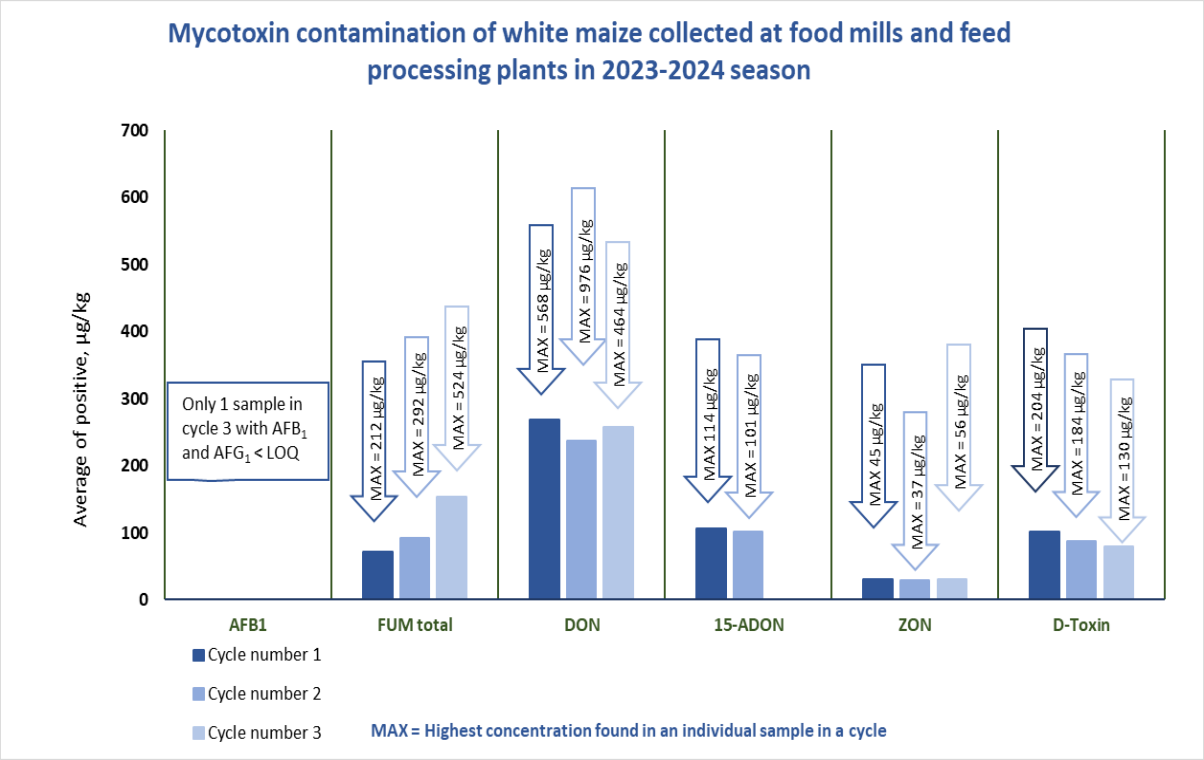


Figure 1. Mycotoxin concentrations in white maize

The following trends in FUM, DON, ZON and diplodiatoxin in white maize were observed.

- **Fumonisins (total) in white maize:**

  - Occurrence:
    - Only 28% and 30% of white maize samples in cycle 1 and 2 respectively contained fumonisins. FUM increased to 50% in cycle 3.
    - As shown in Figure 2, the percentage of samples testing positive for fumonisins has varied over the past nine seasons. Initially, over 90% of the samples in the first two seasons tested positive. The percentage decreased to approximately 50% from the 2017-2018 to the 2020-2021 season. A further decrease in FUM occurrence was reported in the first cycle of the 2021-2022 season. Since then, an increasing trend is observed, with the percentage of positive samples rising from 10% to 50%.

  - Concentrations:
    - Average concentration levels of all positive samples were low this season with 72 µg/kg , 92 µg/kg , and 153 µg/kg in cycle 1, 2 and 3, respectively. See Table 1 and Figure 1.
    - Maximum FUM concentrations found in individual samples were 212 µg/kg (cycle 1), 292 µg/kg (cycle 2) and 524 µg/kg (cycle 3); all collected in the Free State.
    - The concentration ranges of the white maize with FUM (FB_1 + FB_2) in the three cycles showed no samples with FUM > 750 ug/kg. See Figure 3 for a comparison of the concentration ranges in the latest 4 seasons.
    - FUM concentrations in the last six seasons were significantly lower than the maximum allowable concentration (4000 µg/kg) specified in the SA Regulation for unprocessed maize intended for human consumption [(3)].

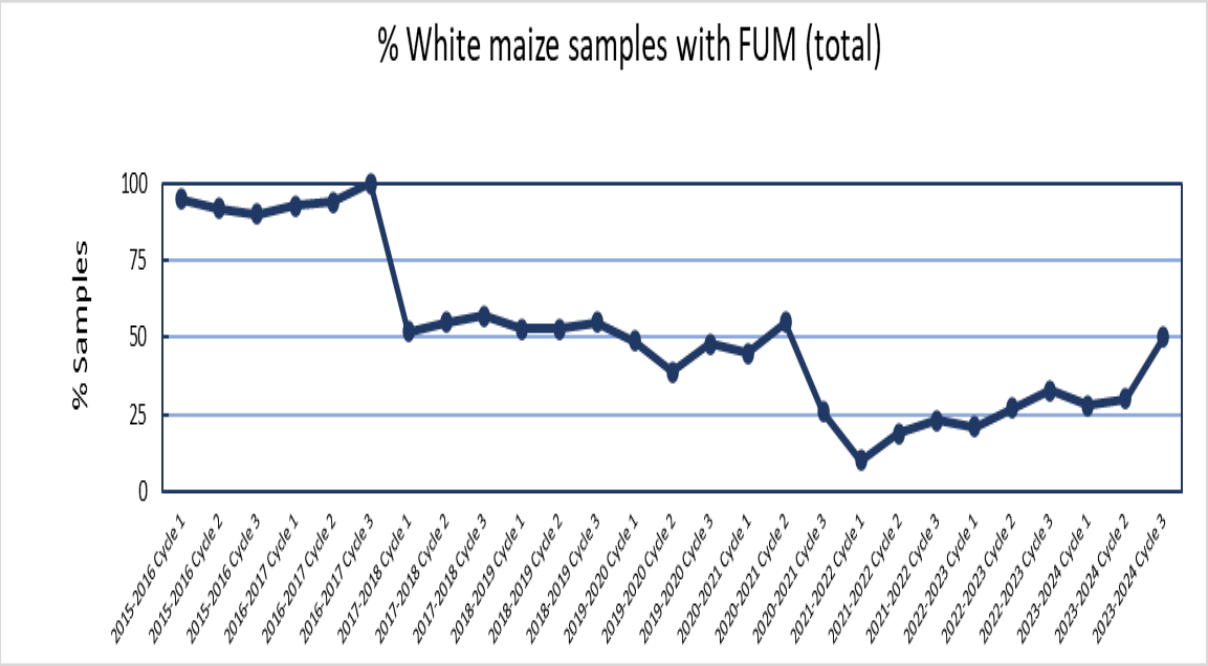


Figure 2. Fumonisin occurrence in white maize at processing plants over 27 sampling cycles in nine processing seasons

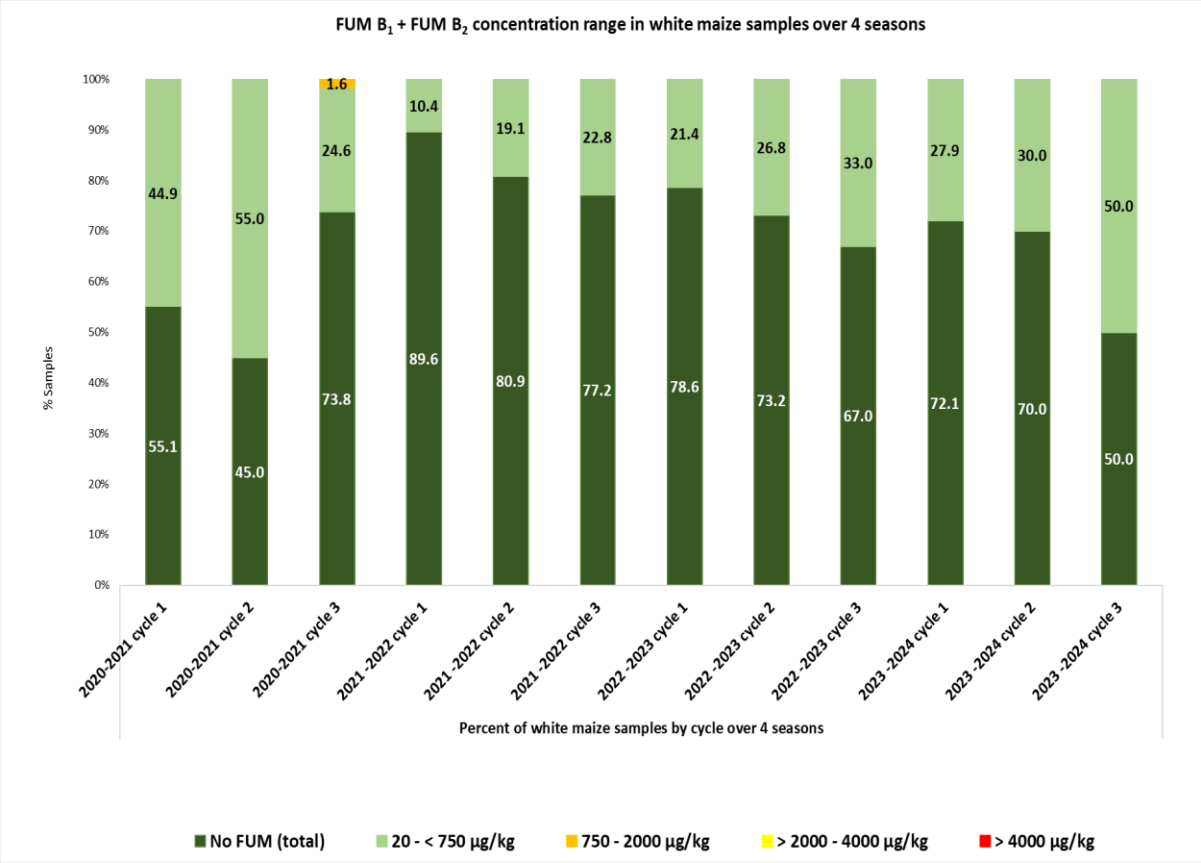


Figure 3. Fumonisin concentration ranges in white maize over 4 seasons

- **Deoxynivalenol in white maize:**

  - Occurrence:
    - DON was found in 38% of the samples in both cycle 1 and cycle 2 and 23% of the samples in cycle 3 in the 2023-2024 season. This is a decrease compared to the previous season when the highest DON occurrence (100%) was found in cycle 1 of the 2022-2023 season, as shown in Figure 4.
    - DON was the most prevalent mycotoxin in white maize samples from 2017-2018 until cycle 2 of this season.

  - Concentrations:
    - Average DON concentrations were 269 µg/kg , 237 µg/kg , and 258 µg/kg in cycle 1, 2 and 3, respectively, see Table 1 and Figure 1.
    - Maximum DON concentrations in individual samples were 568 µg/kg (cycle 1), 976 µg/kg (cycle 2) and 464 µg/kg (cycle 3), see Table 1 and Figure 1.
    - A large variation in the DON concentration ranges over the last four seasons was observed as illustrated in Figure 5.
    - Samples with DON concentrations more than the maximum allowable DON concentration (2000 µg/kg) specified in the SA Regulation for unprocessed maize intended for human consumption [(3)] were reported in five of the nine cycles of the 2020-2021 to 2022-2023 seasons.
    - Since cycle 3 of the 2022-2023 season no white maize with concentrations > 1000 µg/kg were found.

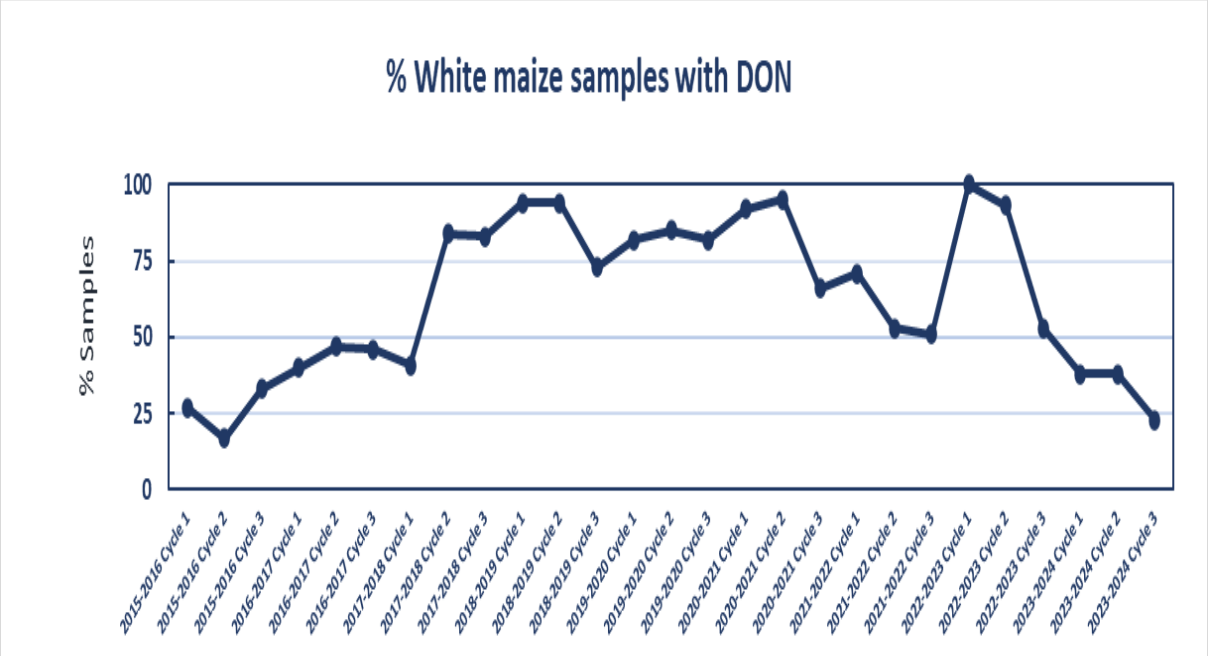


Figure 4. Deoxynivalenol occurrence in white maize at processing plants over 27 cycles in nine seasons

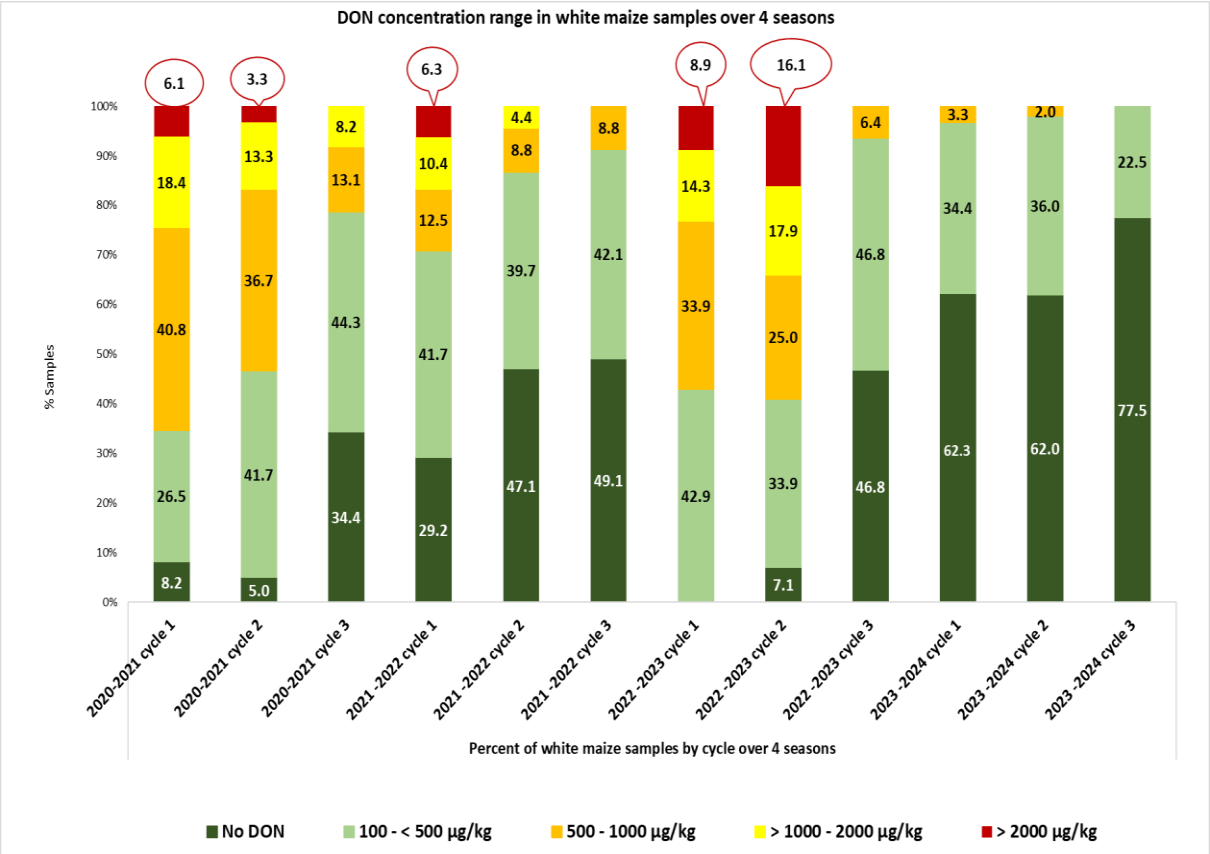


Figure 5 Deoxynivalenol concentration ranges in white maize over 4 seasons

- **Zearalenone in white maize:**

  - Occurrence:
    - ZON was found in 12 samples this season, this is a decrease compared to the previous five seasons.
    - The highest ZON occurrence was reported in the 2018-2019 season, when 35 samples tested positive for ZON.

  - Concentrations:
    - Average ZON concentrations of all positive samples this season were 31 µg/kg, 29 µg/kg, and 31 µg/kg in cycle 1, 2 and 3, respectively. See Table 1 and Figure 1.
    - These concentrations are similar to the averages in the previous three seasons as shown in Figure 6.
    - Maximum concentrations in individual samples this season were 45 µg/kg (cycle 1), 37 µg/kg (cycle 2) and 56 µg/kg (cycle 3). These samples were received from production regions in the Mpumalanga province.
    - The maximum concentrations reported in the last three seasons decreased when compared to the 2018-2019 to 2020-2021 seasons, see Figure 6.
    - The highest ZON concentration, 311 µg/kg, in white maize of all nine seasons was reported in 2019-2020. This concentration is slightly less than the EU maximum guidance level of 350 µg/kg for unprocessed maize in food [(10)].

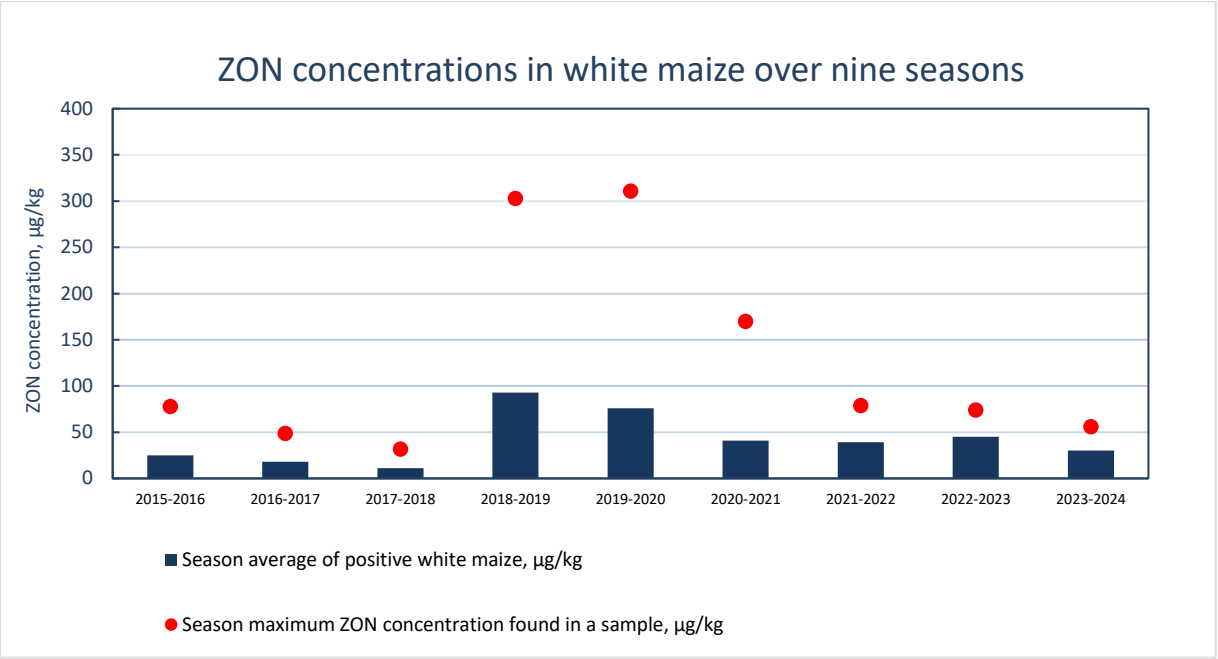


Figure 6. Zearalenone trends in white maize over nine seasons

- **Diplodiatoxin in white maize:**

  - Occurrence:
    - Diplodiatoxin was found in 35 white samples this season. In the 2020 -2021 season diplodiatoxin was only found in 16 white maize samples.
  - Concentrations:
    - Average diplodiatoxin concentrations of all positive samples this season were 101 µg/kg, 88 µg/kg, and 80 µg/kg in cycle 1, 2 and 3, respectively. See Table 1 and Figure 1.
    - These averages are similar to the averages in the 2020 - 2021 season.
    - Maximum concentrations in single samples were 204 µg/kg (cycle 1), 184 µg/kg (cycle 2) and 130 µg/kg (cycle 3), from production regions in the Free State and Limpopo province.

- **Co-occurrence of different mycotoxins in white maize:**

  - In the current season, 16 samples were contaminated with both FUM and DON, compared to 46 samples in the 2022 – 2023 season and 25 samples in 2021-2022 season.
  - Similarly, 12 samples were contaminated with both DON and ZON in the current season compared to 26 samples in the 2022 – 2023 season and 24 samples in 2021-2022 season.
  - Three white maize samples tested positive for FUM, DON and ZON compared to seven samples the previous season.

3.2 Mycotoxins in Yellow Maize

The feed processing mills submitted 180 yellow maize samples. Only two of these samples were collected in cycle 3 from imported maize from Argentina. The suppliers of maize to both a food and two feed processing mills sent 18 yellow maize samples

106 of the 198 yellow maize samples (54%) contained one or more mycotoxin. The results confirmed the presence of fumonisin B_1, B_2 and B_3 (FUM), deoxynivalenol (DON), 15-acetyl deoxynivalenol (15-ADON), zearalenone (ZON) and diplodiatoxin in yellow maize. The number of yellow maize samples contaminated, the averages and maximum concentrations of the different mycotoxins detected in the different sampling cycles are summarised in Table 2 and illustrated in Figure 7. The mean concentration of each mycotoxin was calculated as the average of the positive samples excluding results below the LOQs. The maximum concentrations were measured in individual samples tested in each cycle.

Table 2 Mycotoxin contamination of yellow maize received in 2023 – 2024 for feed processing.

Mycotoxin	Afla B_1	FUM B_1 + FUM B_2	FUM total	DON	15-ADON	ZON	Diplodia toxin
Cycle number 1 (Nov 2023 – January 2024)							
Total number of samples analysed	65						
number of samples positive	0	21	21	31	6	7	24
% samples positive	0	32	32	48	9	11	37
Average of positive (µg/kg)	ND	274	287	344	167	120	146
Maximum (µg/kg)	ND	1170	1244	1822	240	390	452
Cycle number 2 (March - April 2024)							
Total number of samples analysed	63						
number of samples positive	0	24	24	26	0	2	25
% samples positive	0	38	38	41	0	3	40
Average of positive (µg/kg)	ND	516	554	199	ND	40	232
Maximum (µg/kg)	ND	5510	6024	521	ND	47	2361
Cycle number 3 (June - July 2024)							
Total number of samples analysed	70						
number of samples positive	0	13	13	22	2	3	36
% samples positive	0	19	19	31	3	4	51
Average of positive (µg/kg)	ND	338	359	231	136	35	187
Maximum (µg/kg)	ND	1847	1981	687	166	49	1022

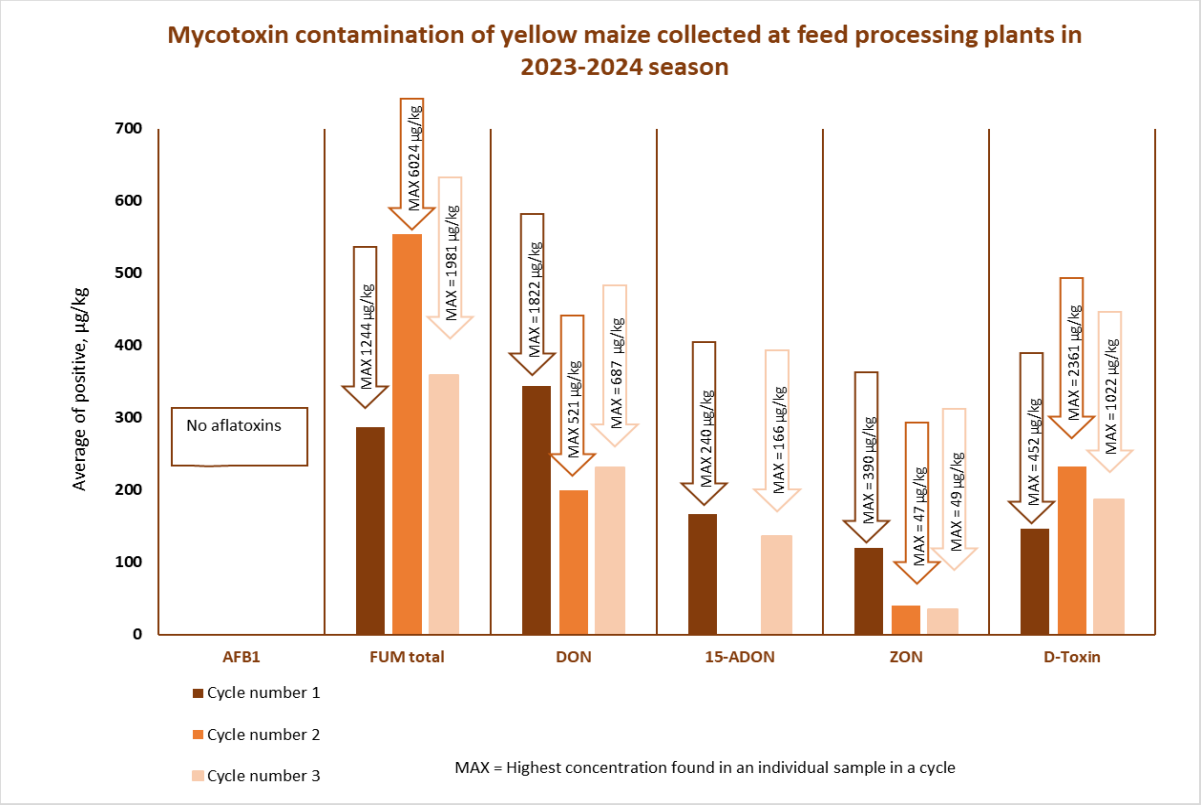


Figure 7. Mycotoxin concentrations in yellow maize

The following trends in FUM, DON and ZON in yellow maize were observed.

- **Fumonisins (total) in yellow maize:**

  - Occurrence:
    - Only 32%, 38%, and 19% of the samples tested positive for FUM in cycle 1, 2 and 3 respectively in the 2023-2024 season. See Table 2.
    - The percentage yellow maize samples tested positive for FUM over the past nine seasons varied as shown in Figure 8. In two cycles of the first two seasons FUM was reported in 94% of the samples. A notable decrease in the occurrence is observed from the third cycle of the 2020-2021 season.

  - Concentrations:
    - As shown in Table 2 and Figure 7, the average FUM concentrations for the positive samples were 287 µg/kg, 554 µg/kg , and 359 µg/kg in cycle 1, 2 and 3, respectively. These FUM concentrations were lower than the previous season (2022-2023).
    - Highest average FUM concentration was reported in the 2016-2017 season (1730 µg/kg) and the lowest average concentration (168 µg/kg) reported in 2021-2022.
    - The maximum FUM concentration reported in cycle 1 was 1244 µg/kg, in a sample from the Northern Cape. In cycle 2, the maximum concentration was 6024 µg/kg, in a sample from Limpopo. A yellow maize sample from imported Argentinean maize had the highest FUM concentration (1981 µg/kg) in cycle 3.
    - The highest FUM concentrations were measured in cycle 2 of the current season where 1 sample (1.6 %) had a concentration higher than 4000 µg/kg and 1 sample (1.6 %) had a concentration between 2000 and 4000 µg/kg. See Figure 9 for a comparison of the concentration ranges in the cycles of the recent four seasons.

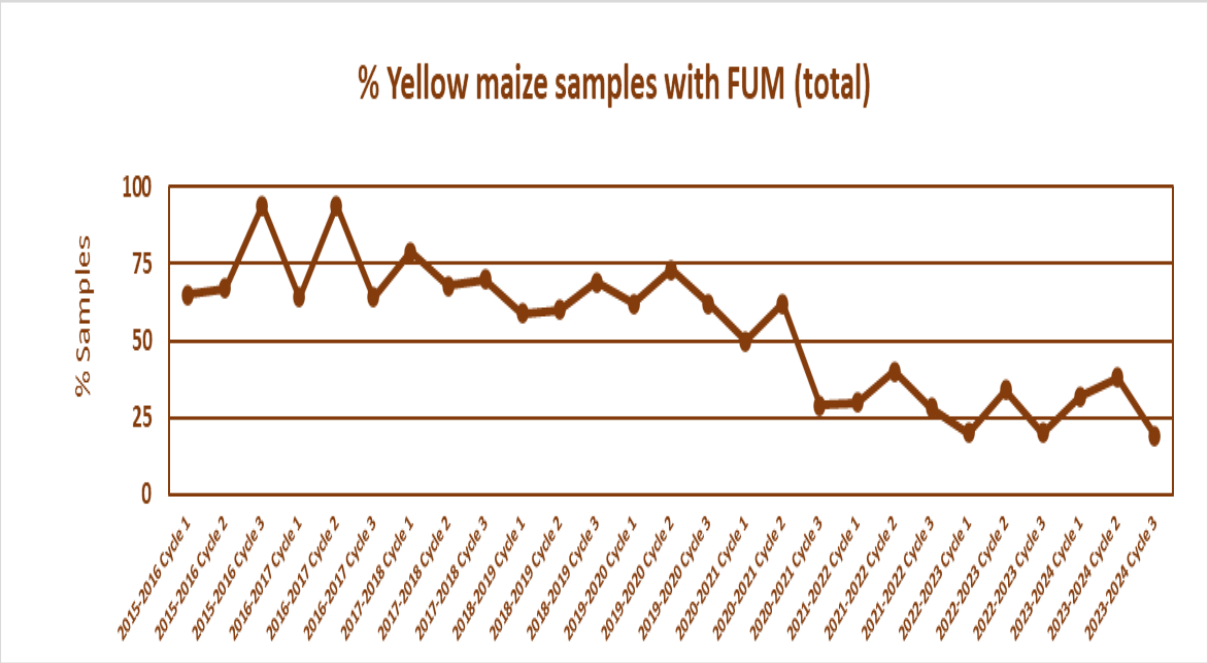


Figure 8 Fumonisin occurrence in yellow maize at processing plants over 27 cycles in nine seasons

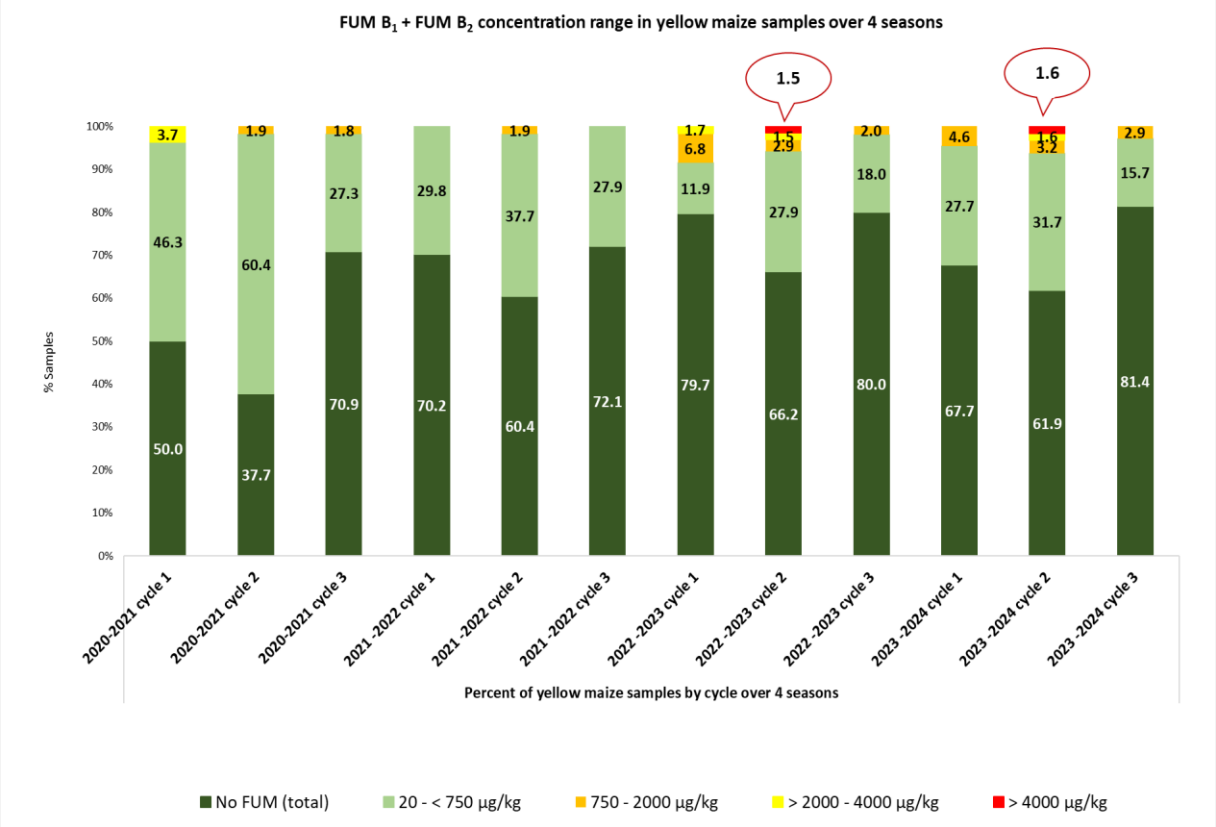


Figure 9 Fumonisin concentration ranges in yellow maize over 4 seasons

- **Deoxynivalenol in yellow maize:**

  - Occurrence:
    - DON was detected this season in 48%, 41%, and 31% of the samples in cycle 1, 2 and 3, respectively. See Table 2.
    - For the sixth consecutive season DON was the most prevalent mycotoxin in yellow maize, as shown in Figure 10.
    - The number of yellow maize samples contaminated with DON decreased compared to the previous five seasons as shown in Figure 10.

  - Concentrations:
    - Average DON concentrations this season were 344 µg/kg, 199 µg/kg, and 231 µg/kg in cycle 1, 2 and 3, respectively. See Table 2 and Figure 7.
    - Maximum concentrations in individual samples were 1822 µg/kg (cycle 1 from Free State), 521 µg/kg (cycle 2 from Gauteng) and 687 µg/kg (cycle 3 from Mpumalanga). Notably, the maximum DON concentrations observed in cycles 2 and 3 were lower than those recorded in any of the previous five seasons.
    - No yellow maize samples exceeded a DON concentration of 2000 µg/kg in the current season. In the previous season (2022-2023) five yellow maize samples contained DON concentrations higher than 2000 µg/kg. Figure 11 illustrates the DON concentration ranges observed over the last four seasons.
    - Only one yellow maize sample in cycle 1 had a DON concentration within the 1000 to 2000 µg/kg range. In the previous season 8 samples contained DON in this concentration range.
    - The highest DON (12470 µg/kg) in all 9 seasons was reported in cycle 1 of the 2018-2019 season.

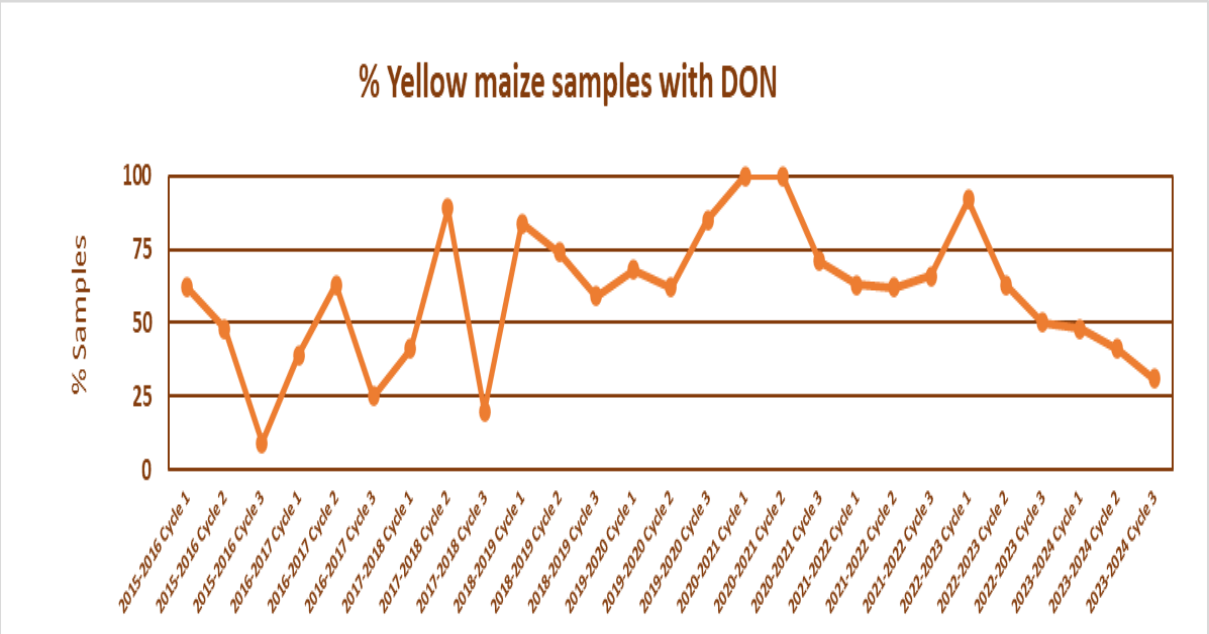


Figure 10 Deoxynivalenol occurrence in yellow maize at processing plants over 27 cycles in nine seasons

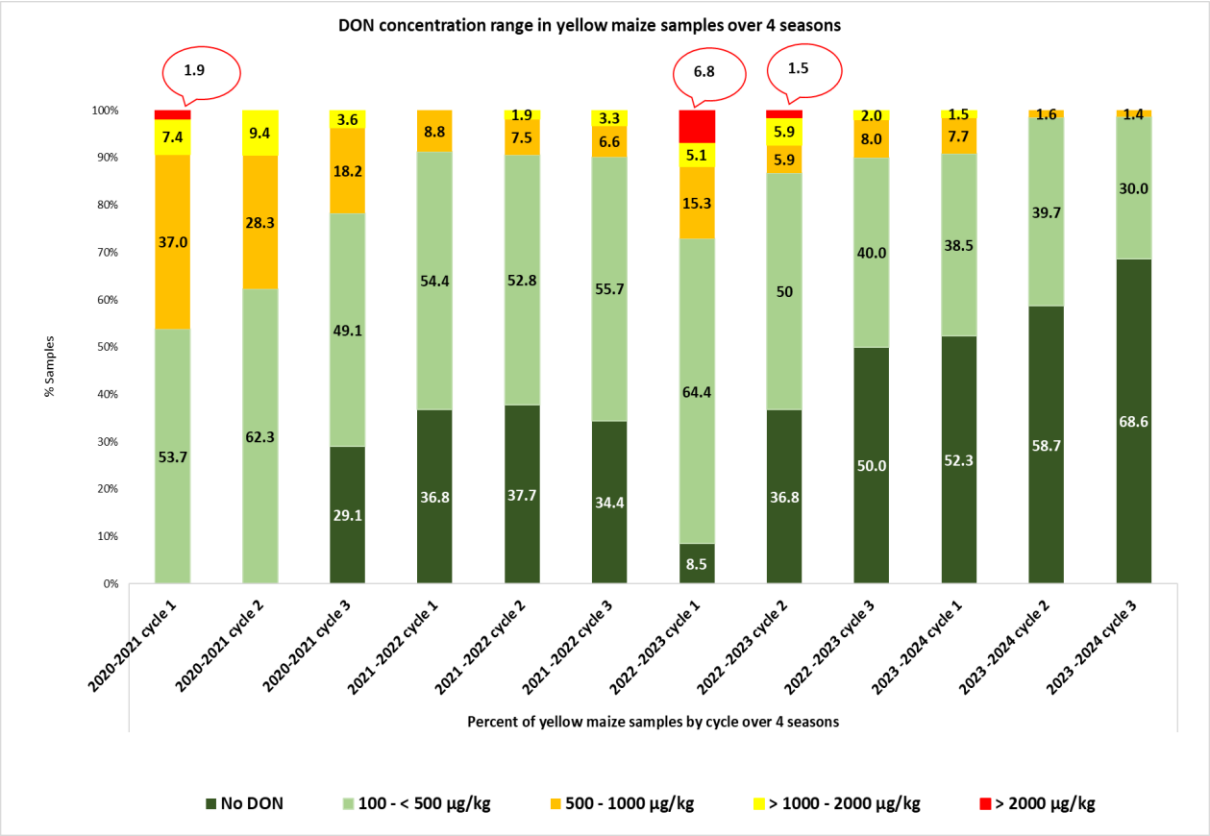


Figure 11 Deoxynivalenol concentration ranges in yellow maize over 4 seasons

- **Zearalenone in yellow maize:**

  - Occurrence:
    - ZON was detected in 12 yellow maize samples this season, consistent with the occurrence observed in the previous two seasons.

  - Concentrations:
    - The average ZON concentration levels of all positive samples this season were 120 µg/kg in cycle 1 and 40 µg/kg and 35 µg/kg in cycle 2 and 3, respectively.
    - The highest ZON concentration, 390 µg/kg, was reported in cycle 1, in a yellow maize sample collected from the Free State province.
    - The highest ZON concentration (844 µg/kg) of all nine seasons was reported in a yellow maize sample during cycle 1 of the previous season (2022 – 2023) as shown in Figure 12. This concentration exceeds the maximum permitted ZON concentration in feeding stuffs on full ration basis for calves and dairy cattle [(4)]. See Annexure C for summary of SA Regulations.

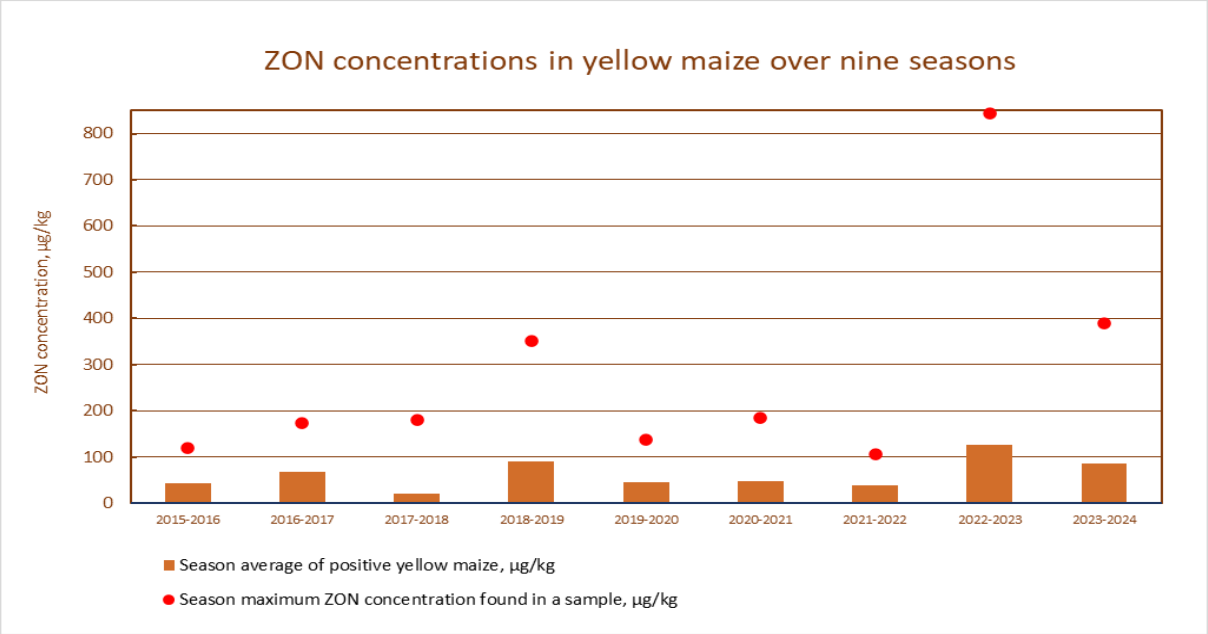


Figure 12. Zearalenone trends in yellow maize over nine seasons

- **Diplodiatoxin in yellow maize:**

  - Occurrence:
    - Diplodiatoxin was detected in 85 yellow maize samples during the current season, an increase compared to the 2020-2021 season when only 10 samples were contaminated with this mycotoxin.
  - Concentrations:
    - Average diplodiatoxin concentration of all positive samples were 146 µg/kg, 232 µg/kg, and 187 µg/kg in cycle 1, 2 and 3, respectively. See Table 2 and Figure 7. These average concentrations exceed those observed in the 2020-2021 season.
    - Maximum diplodiatoxin concentrations in individual samples were 452 µg/kg (cycle 1), 2361 µg/kg (cycle 2) and 1022 µg/kg (cycle 3), in samples obtained from the Mpumalanga, Free State and North West production regions, respectively.

- **Co-occurrence of different mycotoxins in yellow maize:**

  - Thirty-two samples contained both FUM and DON in the current season, compared to 38 samples in the 2021-2022 season.
  - Seven of the yellow maize samples tested positive for FUM, DON and ZON, while 11 samples contained both DON and ZON.
  - The sample with the highest ZON concentration (390 µg/kg) in cycle 1 contained 1822 µg/kg DON, 240 µg/kg 15-ADON and 869 µg/kg FUM (total).

4. Recommendation

The consistent absence of aflatoxins in the maize samples collected since the project's commencement in the 2015-2016 processing season is an advantage for food safety and food security in South Africa. The results of the mycotoxin survey in maize collected at food and feed processing mills over nine years revealed interesting seasonal variations in the occurrence of fumonisins, deoxynivalenol, 15-ADON and zearalenone. In contrast to the notable increase in DON and ZON occurrence observed over the previous five seasons the percentage of samples testing positive for DON and ZON decreased in the 2023–2024 season. Fumonisin occurrence decreased from the 2016–

2017 season onwards. The variation in the concentration ranges reported emphasises the necessity for the processors to implement and maintain robust mycotoxin testing programs for incoming maize to ensure the safety of their final food and feed products.

The tenth survey of pre-processing (post-storage) maize stocks at the processing plants during the 2024-2025 season has already commenced with Maize Trust funding. The continued participation of food and feed processing mills by collecting representative maize samples at the pre-processing stage is crucial to ensure reliable mycotoxin data generation at this processing level. The data are essential for addressing the economic and health risks associated with mycotoxin contamination in agricultural crops. Food and feed processing mills are strongly encouraged to support this ongoing initiative to gain a comprehensive year-on-year overview of mycotoxin occurrence.

5. Material and methods

5.1. Collection of samples

The food and feed processing mills participated by collecting maize samples for the mycotoxin analysis on a voluntarily basis in three collection periods from different consignments of maize delivered from different production or storage regions in SA. Four different food processing mills, including members of the National Chamber of Milling collected white maize. Two silos that supply maize to both food and feed processing mills collected yellow and white maize samples. Twenty one feed mills, all members of the Animal Feed Manufacturers Association (AFMA), collected mainly yellow maize samples in all three collection periods. The composite samples sent to the SAGL ranged from approximately 1 to 10 kg. One food processing mill submitted more than one sample taken on the same day from the same producer/region and composite samples were made.

349 maize samples (151 white maize and 198 yellow maize) were collected as summarised in Table 3. Only 2 yellow maize samples were collected from imported maize from Argentina, the other 347 samples submitted were collected from SA produced maize.

Most of the samples came from the three main maize production provinces in South Africa, the Free State, North West and Mpumalanga. It must be noted that not all the production regions were recorded on the sample submission forms. In Annexure B is a map illustrating the crop production regions in South Africa.

Table 3. Summary of the pre-processing maize samples submitted for mycotoxin analysis

Sample collection period		**Summary of samples collected by the processing mills**					
		Food processing mills		**Suppliers to both food and feed processing mills**		**Feed processing mills**	
Cycle number	Collection period	Number of mills	Number of samples submitted	Number of suppliers	Number of samples submitted	Number of mills	Number of samples submitted
1	November 2023-January 2024	3	56	2	9	26	61
2	March - April 2024	4	47	2	6	27	60
3	June - July 2024	4	33	2	17	26	60
Cycle 1 , 2 and 3	**November 2023 – July 2024**	**4**	**136**	**2**	**32**	**27**	**181**

5.2. Analytical method and quality assurance

Each sample was milled with a Mazzer mill set to the equivalent of a 1 mm sieve and mixed on a mixer for at least 90 minutes to ensure homogeneity of the sample.

All the samples were analysed with the SAGL multi-mycotoxin UPLC-MS/MS method; a SANAS accredited method [5] for the simultaneous analysis of aflatoxin B_1, G_1, B_2, G_2, fumonisin B_1, B_2, B_3 (FUM), deoxynivalenol (DON) including 15-acetyl deoxynivalenol (15-ADON), T-2 toxin, HT-2 toxin, zearalenone (ZON) and ochratoxin A (OTA). Diplodiatoxin was included this season

Duplicate subsamples were extracted with the extraction solution, diluted, and analysed with the UPLC-MS/MS. The mycotoxins were separated on a reversed-phase UPLC column and analysed with positive electrospray (EI) ionisation in the multiple reaction monitoring (MRM) mode. For each compound, one precursor and two product ions were monitored, one product ion for quantification and one for confirmation.

The reference materials purchased from Biopure and Cape Town University of Technology (CPUT) were used for the preparation of separate stock solutions of each mycotoxin. The diplodiatoxin was obtained from the University of Pretoria. Matrix-matched working standards containing a mixture of the 14 mycotoxins (See Table 4) were prepared for each batch of samples to construct a calibration curve for each mycotoxin with at least five calibration levels. A blank maize sample was analysed with every batch of samples to confirm that no contamination was present in the laboratory.

The method is an accredited method under the requirements of ISO 17025:2017 [5] and the limit of quantitation (LOQ) and limit of detection (LOD) are given in Table 4.

Table 4. Limit of quantitation and limit of detection

Mycotoxin	Limit of quantitation, (LOQ), µg/kg	Limit of detection, (LOD), µg/kg	Concentration range, µg/kg
Aflatoxin B_1	5	2.5	1.25 – 80
Aflatoxin B_2	5	2.5	1.25 - 80
Aflatoxin G_1	5	2.5	1.25 - 80
Aflatoxin G_2	5	2.5	1.25 - 80
Deoxynivalenol	100	50	50 - 4000
15 Acetyl deoxynivalenol	100	50	50 - 4000
Fumonisin B_1	20	10	10 - 4000
Fumonisin B_2	20	10	10 - 4000
Fumonisin B_3	20	10	10 - 4000
Ochratoxin A	5	2.5	1.25 - 80
T-2 Toxin	20	10	10 - 4000
HT-2 toxin	20	10	10 - 4000
Zearalenone	20	10	10 – 4000
Diplodiatoxin *	50	25	25 – 4000

*Diplodiatoxin not included in the accredited multi-mycotoxin method

General laboratory performance is verified by successful participation in the bimonthly Bipea and FAPAS international proficiency testing programs. These assessment programs provide several test samples for each mycotoxin group and commodity type.

6. References

(1) SAGL Annual Reports for mycotoxin levels on post storage maize from 2015-2016 until 2022-2023.
(2) SA Regulation published under Government Notice No. R. 1145, dated 8 October 2004.
(3) SA Government Notice NO. 987 of 05 September 2016.
(4) Amendment No. R 70 dated 12 February 2010 of Act 36 of 1947 Fertilizers, Farm Feeds, Agricultural and Stock Remedies.
(5) See the Section: Accreditation on the SAGL webpage www.sagl.co.za
(6) Meyer, J.C., *Chemical analysis and survey of mycotoxins in South African produced grains with emphasis on those produced by Stenocarpella maydis in maize*, Doctoral Thesis, University of Pretoria, 2024.
(7) Van Der Bijl, P. A., *Mouldness of mealie cobs*, Agricultural Journal of the Union of South Africa, 1, 566, 1915.
(8) Mitchell, D. *A Condition produced, in Cattle Feeding on Maize Infected with Diplodia zea.* Union of South Africa, Dept. of Agriculture. 7th & 8th Repts. of the Director of Veterinary Research, 1918.
(9) Mitchell, D. *Poisoning of cattle by Diplodia-infected maize*. South African Journal of Science, 16, 446-452, 1919.
(10) European Commission (EC) Commission Regulation (EC) N0 1126/2007 amending Regulation No 1881/2006 setting maximum levels of certain contaminants in foodstuffs as regards Fusarium toxins in maize and maize products. *Official Journal of the European Union* **2006**, *L 255*, 14-17

Annexure A

MYCOTOXIN RESULTS OF WHITE MAIZE SAMPLES (POST STORAGE PRE-PROCESSING 2023- 2024)

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	A	82/070324	March - April 2024	22	25/03/2024	ND	ND	ND	ND	ND	34	ND	ND	34	ND	ND	ND	ND	ND	ND	51
2	A	87/070324	March - April 2024	22	25/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51
2	A	89/07032024	March - April 2024	26	25/03/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	51
2	A	83/070324	March - April 2024	Free State	25/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51
2	A	2520817/1043	March - April 2024	24	25/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	213	ND	ND	ND	ND	ND	<LOQ
3	A	45/07/24	June - July 2024	Free State	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
3	A	30/2024/280	June - July 2024	24	02/08/2024	ND	ND	ND	ND	ND	163	64	ND	227	ND	ND	ND	ND	ND	ND	<LOQ
3	A	282/07/24	June - July 2024	24	02/08/2024	ND	ND	ND	ND	ND	55	22	ND	77	ND	ND	ND	ND	ND	ND	ND
3	A	202/18/06/24	June - July 2024	36	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	67
3	A	79/07/24	June - July 2024	28	02/08/2024	ND	ND	ND	ND	ND	27	36	ND	63	464	<LOQ	ND	ND	ND	ND	96
3	A	201/18/06/24	June - July 2024	25	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	62
3	A	05/07/24-41	June - July 2024	26	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	A	65/07/24	June - July 2024	Free State	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	B	KR 50	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	B	KR49	November 2023	23	20/11/2023	ND	ND	ND	ND	ND	62	31	ND	93	<LOQ	ND	ND	ND	ND	ND	<LOQ
1	B	KR 47	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	B	KR 39	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	B	KR 1	November 2023	22	20/11/2023	ND	ND	ND	ND	ND	63	26	ND	89	ND	ND	ND	ND	ND	ND	ND
1	B	KR 4	November 2023	21	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	B	KR 20	November 2023	22	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	472	<LOQ	ND	ND	ND	ND	ND

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	B	KR 13	November 2023	24	20/11/2023	ND	ND	ND	ND	ND	44	ND	ND	44	<LOQ	ND	ND	ND	ND	ND	64
1	B	KR 7	November 2023	23	20/11/2023	ND	ND	ND	ND	ND	70	29	ND	99	388	<LOQ	ND	ND	ND	ND	106
1	B	KR 11	November 2023	23	20/11/2023	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	196	ND	ND	ND	ND	ND	ND
1	B	KR 14	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	502	<LOQ	ND	ND	ND	ND	146
1	B	KR 26 + KR 40	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	41	ND	ND	41	113	ND	ND	ND	ND	ND	<LOQ
1	B	KR 12 + KR 17	November 2023	24	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	105	ND	ND	ND	ND	ND	ND
1	B	KR 3 + KR 27	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	241	ND	ND	ND	ND	ND	ND
1	B	KR 18 + KR 21	November 2023	24	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
1	B	KR2 + KR 24	November 2023	21	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	B	KR 6 + KR 34	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	145	ND	ND	ND	ND	ND	ND
1	B	KR 22 + KR 32 + KR 38	November 2023	24	20/11/2023	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	170	ND	ND	ND	ND	ND	ND
1	B	KR 31 + KR 36 + KR 45	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	160	52	ND	212	361	ND	ND	ND	ND	ND	ND
1	B	KR 28, KR 35, KR 41 + KR 48	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	36	<LOQ	ND	36	<LOQ	ND	ND	ND	ND	ND	<LOQ
1	B	KR 9, KR 23, KR 33 + KR 46	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	B	KR 8, KR 15, KR 37 + KR 29	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	144	52	ND	196	252	ND	ND	ND	ND	ND	77
1	B	KR 5, KR 19, KR 30 + KR 42	November 2023	23	20/11/2023	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	131	ND	ND	ND	ND	ND	69
1	B	KR 10, KR 25, KR 43 + KR 44	November 2023	Free State	20/11/2023	ND	ND	ND	ND	ND	51	ND	ND	51	<LOQ	ND	ND	ND	ND	ND	ND
2	B	KR29	March 2024	Free State	04/04/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	B	KR32	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	B	KR20	March 2024	21	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	B	KR50	March 2024	23	04/04/2024	ND	ND	ND	ND	ND	142	69	ND	211	110	ND	ND	ND	ND	ND	102
2	B	KR7+ KR28	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	361	101	ND	ND	ND	ND	ND

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	B	KR15+ KR31	March 2024	15	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	123	ND	ND	ND	ND	ND	58
2	B	KR6 +KR8	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
2	B	KR38 +KR39	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	399	<LOQ	ND	ND	ND	ND	ND
2	B	KR21 + KR23	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	220	72	<LOQ	292	111	ND	ND	ND	ND	ND	ND
2	B	KR2 + KR9	March 2024	Free State	04/04/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	267	ND	ND	ND	ND	ND	ND
2	B	KR1 + KR10	March 2024	24	04/04/2024	ND	ND	ND	ND	ND	33	<LOQ	ND	33	188	ND	ND	ND	ND	ND	56
2	B	KR19 + KR37 + KR44	March 2024	24	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	B	KR35 + KR40 + KR45	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	B	KR31 + KR4 + KR5	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	B	KR34 + KR42 + KR48	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	B	KR26 + KR33 + KR41	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	71	ND	<LOQ	71	362	<LOQ	ND	ND	ND	ND	ND
2	B	KR27+ KR46 + KR47	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	B	KR11 + KR17 + KR22	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	B	KR18 + KR25 + KR43	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	69	<LOQ	ND	69	144	ND	ND	ND	ND	ND	155
2	B	KR12, KR14, KR24 + KR30	March 2024	Free State	04/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	184
2	B	KR13, KR16, KR36 + KR49	March 2024	21	04/04/2024	ND	ND	ND	ND	ND	62	23	ND	85	ND	ND	ND	ND	ND	ND	ND
3	B	KR 33	July 2024	19	08/08/2024	ND	ND	ND	ND	ND	62	<LOQ	ND	62	ND	ND	ND	ND	ND	ND	<LOQ
3	B	KR 10	July 2024	21	08/08/2024	ND	ND	ND	ND	ND	43	<LOQ	ND	43	ND	ND	ND	ND	ND	ND	ND
3	B	KR 11	July 2024	21	08/08/2024	ND	ND	ND	ND	ND	230	74	22	326	ND	ND	ND	ND	ND	ND	ND
3	B	KR 25, KR 32, KR 39	July 2024	22	08/08/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	ND
3	B	KR 16	July 2024	22	08/08/2024	ND	ND	ND	ND	ND	128	47	ND	175	<LOQ	ND	ND	ND	ND	ND	ND
3	B	KR 9, KR 19	July 2024	22	08/08/2024	ND	ND	ND	ND	ND	83	35	ND	118	ND	ND	ND	ND	ND	ND	ND

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
3	B	KR 4	July 2024	23	08/08/2024	ND	ND	ND	ND	ND	64	27	ND	91	ND	ND	ND	ND	ND	ND	ND
3	B	KR 17, KR 8, KR 21, KR 42	July 2024	24	08/08/2024	ND	ND	ND	ND	ND	343	153	28	524	ND	ND	ND	ND	ND	ND	ND
3	B	KR 14, KR 24, KR 34, KR 45	July 2024	24	08/08/2024	ND	ND	ND	ND	ND	29	<LOQ	ND	29	ND	ND	ND	ND	ND	ND	<LOQ
3	B	KR 35	July 2024	Free State	08/08/2024	ND	ND	ND	ND	ND	48	<LOQ	ND	48	ND	ND	ND	ND	ND	ND	ND
3	B	KR 27	July 2024	Free State	08/08/2024	ND	ND	ND	ND	ND	79	36	ND	115	ND	ND	ND	ND	ND	ND	55
3	B	KR 12, KR 22, KR 23, KR 29	July 2024	Free State	08/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	24/10/2023	16	17/11/2023	ND	ND	ND	ND	ND	43	<LOQ	ND	43	ND	ND	ND	ND	ND	ND	<LOQ
1	C	NS	26/10/2023	21	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	C	NS	06/11/2023	16	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	344	<LOQ	ND	ND	ND	ND	66
1	C	NS	11/11/2023	16	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	09/10/2023	18	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	09/10/2023	18	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	C	NS	09/10/2023	17	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	485	<LOQ	ND	ND	ND	ND	<LOQ
1	C	NS	09/10/2023	17	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	71
1	C	NS	09/10/2023	34	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	13/10/2023	18	17/11/2023	ND	ND	ND	ND	ND	26	<LOQ	ND	26	ND	ND	ND	ND	ND	ND	ND
1	C	NS	06/11/203	16	17/11/2023	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	ND
1	C	NS	16/10/2023	20	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	30/10/2023	17	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	01/11/2023	21	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	25/10/2023	21	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	204
1	C	NS	06/11/2023	17	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	C	NS	25/10/2023	17	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	123	ND	ND	ND	ND	ND	ND
1	C	NS	16/11/2023	17	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	C	NS	25/10/2023	18	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	C	NS	09/11/2023	21	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	NS	17	22/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	NS	34	22/02/2024	ND	ND	ND	ND	ND	20	ND	ND	20	ND	ND	ND	ND	ND	ND	<LOQ
1	C	NS	NS	18	22/02/2024	ND	ND	ND	ND	ND	37	ND	ND	37	ND	ND	ND	ND	ND	ND	ND
1	C	NS	NS	17	22/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	165	ND	ND	ND	ND	ND	ND
1	C	NS	NS	18	22/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	C	NS	NS	21	22/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	12/12/2023	16	22/02/2024	ND	ND	ND	ND	ND	45	ND	ND	45	<LOQ	ND	ND	ND	ND	ND	ND
1	C	NS	11/12/2023	18	22/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	C	NS	NS	21	22/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	60
2	C	NS	11/03/2024	Free State	20/03/2024	ND	ND	ND	ND	ND	92	47	ND	139	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	18/03/2024	15	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	145	ND	ND	ND	ND	ND	101
2	C	NS	08/03/2024	17	20/03/2024	ND	ND	ND	ND	ND	55	25	ND	80	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	11/03/2024	18	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	08/03/2024	23	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	121	ND	ND	ND	ND	ND	ND
2	C	NS	12/03/2024	22	20/03/2024	ND	ND	ND	ND	ND	27	<LOQ	ND	27	119	ND	ND	ND	ND	ND	113
2	C	NS	08/03/2024	22	20/03/2024	ND	ND	ND	ND	ND	46	ND	ND	46	129	ND	ND	ND	ND	ND	160
2	C	NS	08/03/2024	18	20/03/2024	ND	ND	ND	ND	ND	28	<LOQ	ND	28	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	08/03/2024	15	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	C	NS	11/03/2024	21	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	ND	ND	ND	ND	ND	ND
2	C	NS	11/03/2024	15	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	70
2	C	NS	11/03/2024	16	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	15/03/2024	22	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	C	NS	12/03/2024	15	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	85
2	C	NS	15/03/2024	15	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	11/03/2024	13	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	15/03/2024	16	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	C	NS	15/03/2024	15	20/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	C	NS	21/06/2024	22	28/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	C	NS	21/06/2024	22	28/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	C	NS	20/06/2024	18	28/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
3	C	NS	21/06/2024	18	28/06/2024	ND	ND	ND	ND	ND	186	72	<LOQ	258	ND	ND	ND	ND	ND	ND	ND
3	C	NS	20/06/2024	24	28/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	C	NS	20/06/2024	22	28/06/2024	ND	ND	ND	ND	ND	45	ND	ND	45	ND	ND	ND	ND	ND	ND	ND
3	C	NS	11/06/2024	18	28/06/2024	ND	ND	ND	ND	ND	101	51	ND	152	ND	ND	ND	ND	ND	ND	ND
3	C	NS	20/06/2024	18	28/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	361	<LOQ	ND	ND	ND	ND	ND
3	C	NS	11/06/2024	18	28/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	150	ND	ND	ND	ND	ND	ND
3	C	NS	11/06/2024	34	28/06/2024	ND	ND	ND	ND	ND	20	ND	ND	20	ND	ND	ND	ND	ND	ND	ND
1	D	MOK00124	December 2023	Limpopo	19/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	104	ND	ND	ND	ND	ND	ND
1	D	LYD00223	January 2024	33	19/01/2024	ND	ND	ND	ND	ND	95	28	ND	123	320	ND	ND	33	ND	ND	ND
1	D	LTT00224	January 2024	33	19/01/2024	ND	ND	ND	ND	ND	34	ND	ND	34	<LOQ	ND	ND	ND	ND	ND	ND
2	D	LTT-APRIL 2024	April 2024	Limpopo	30/04/2024	ND	ND	ND	ND	ND	62	22	ND	84	<LOQ	ND	ND	ND	ND	ND	ND
2	D	LYD-APRIL 2024	April 2024	Mpumalanga	30/04/2024	ND	ND	ND	ND	ND	35	ND	ND	35	ND	ND	ND	ND	ND	ND	ND

WHITE MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	D	MOK-APRIL 2024	April 2024	Limpopo	30/04/2024	ND	ND	ND	ND	ND	108	35	ND	143	976	<LOQ	ND	20	ND	ND	ND
3	D	MOK-JULY2024	11/07/2024	35	12/07/2024	ND	ND	ND	ND	ND	70	24	ND	94	ND	ND	ND	ND	ND	ND	<LOQ
3	D	LYD-JULY2024	27/06/2024	Mpumalanga	12/07/2024	ND	ND	ND	ND	ND	58	22	ND	80	116	ND	ND	ND	ND	ND	<LOQ
3	D	LTT-JULY-2024	10/06/2024	35	12/07/2024	<LOQ	ND	<LOQ	ND	<LOQ	345	139	37	521	ND	ND	ND	ND	ND	ND	130
1	E	#10/412	08/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	42	<LOQ	ND	42	234	<LOQ	ND	22	ND	ND	79
2	E	412/12/2024	March 2024	30	18/03/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	104	ND	ND	ND	ND	ND	ND
3	E	BIN 1	July 2024	30	15/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	347	ND	ND	23	ND	ND	ND
3	E	BIN 10	July 2024	30	15/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	E	BIN 12	July 2024	30	15/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
1	F	BIN 10	10/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	568	114	ND	39	ND	ND	115
1	F	BIN 11	10/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	405	100	ND	45	ND	ND	151
1	F	BIN 14	10/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	155	<LOQ	ND	20	ND	ND	<LOQ
2	F	BIN1-WM1(2)	12/03/2024	30	27/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	232	ND	ND	ND	ND	ND	ND
2	F	BIN13-WM2(2)	12/03/2024	30	27/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	234	ND	ND	37	ND	ND	69
3	F	BIN 1-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	103	ND	ND	ND	ND	ND	ND
3	F	BIN 6-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	317	<LOQ	ND	22	ND	ND	81
3	F	BIN 10-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	113	ND	ND	24	ND	ND	ND
3	F	BIN 8-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	355	<LOQ	ND	56	ND	ND	72
1	W	115035	14/11/2023	24	21/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	207	ND	ND	24	ND	ND	ND

NS = Information not supplied.

ND = Not detected. <LOQ = Less than limit of quantitation. See Table 4.

MYCOTOXIN RESULTS OF YELLOW MAIZE SAMPLES (POST STORAGE PRE-PROCESSING 2023 – 2024)

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	E	#1/412	08/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	277	ND	ND	38	ND	ND	288
1	E	#3/412	08/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	130	ND	ND	ND	ND	ND	154
1	E	#4/412	08/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	296	ND	ND	ND	ND	ND	126
2	E	412/1/2024	March 2024	30	18/03/2024	ND	ND	ND	ND	ND	47	ND	ND	47	102	ND	ND	<LOQ	ND	ND	202
2	E	412/13/2024	March 2024	30	18/03/2024	ND	ND	ND	ND	ND	87	22	ND	109	211	ND	ND	32	ND	ND	188
3	E	BIN 2	July 2024	30	15/07/2024	ND	ND	ND	ND	ND	29	ND	ND	29	<LOQ	ND	ND	ND	ND	ND	109
3	E	BIN 4	July 2024	30	15/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	598
3	E	BIN 13	July 2024	30	15/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	113	ND	ND	<LOQ	ND	ND	301
1	F	BIN 2	10/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	25	ND	ND	25	124	ND	ND	ND	ND	ND	99
1	F	BIN 12	10/11/2023	30	17/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	349
2	F	BIN2-YM1(2)	12/03/2024	30	27/03/2024	ND	ND	ND	ND	ND	26	ND	ND	26	179	ND	ND	ND	ND	ND	113
3	F	BIN 2-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	259	<LOQ	ND	<LOQ	ND	ND	141
3	F	BIN 4-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	56
3	F	BIN 7-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	195	ND	ND	<LOQ	ND	ND	452
3	F	BIN 11-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	<LOQ	ND	ND	ND	ND	ND	92
3	F	BIN 12-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	320	ND	ND	<LOQ	ND	ND	822
3	F	BIN 13-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	239	<LOQ	ND	32	ND	ND	471
3	F	BIN 14-3-24	NS	30	17/07/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	389	105	ND	ND	ND	ND	205
2	G	IAF20240419	12-18/04/2024	24	22/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	G	IAF20240418	12-18/04/2024	23	22/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	H	B 3707206	08/11/2023	Free State	08/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	104	ND	ND	ND	ND	ND	61
1	H	B 3712401	19/12/2023	Free State	08/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
1	H	B 3716476	NS	Free State	08/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	H	B 3728534	NS	Free State	15/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	H	B 3728535	NS	Free State	15/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	H	B3739018	NS	Free State	21/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	23	ND	ND	50
3	H	B3739019	NS	Free State	21/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	98
1	I	E2959596	15/11/2023	Mpumalanga	20/11/2023	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	<LOQ
1	I	E2959597	15/11/2023	Mpumalanga	20/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	I	E 2969589	NS	Mpumalanga	09/02/2024	ND	ND	ND	ND	ND	38	<LOQ	ND	38	458	ND	ND	29	ND	ND	59
1	I	E 2969590	NS	Mpumalanga	09/02/2024	ND	ND	ND	ND	ND	52	<LOQ	ND	52	411	<LOQ	ND	ND	ND	ND	63
2	I	E2980075	NS	Mpumalanga	22/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	I	E2980074	NS	Mpumalanga	22/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	224	ND	ND	ND	ND	ND	<LOQ
3	I	E 2989643	03/07/2024	Mpumalanga	04/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
3	I	E 2989644	03/07/2024	Mpumalanga	04/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
1	J	ISA 0132191	30/11/2023	34	05/02/2024	ND	ND	ND	ND	ND	27	ND	ND	27	137	ND	ND	ND	ND	ND	<LOQ
1	J	ISA 0135677	27/12/2023	32	05/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	62
1	J	ISA 0139710	30/01/2024	21	05/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	J	ISA 01460678	26/03/2024	28	06/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	J	ISA 0148320	18/04/2024	32	06/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	121
2	J	ISA 0150356	26/04/2024	34	06/05/2024	ND	ND	ND	ND	ND	103	33	ND	136	521	<LOQ	ND	47	ND	ND	ND
3	J	ISA0162719	01/08/2024	28	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	69

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
3	J	ISA 0158092	28/06/2024	29	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	687	166	ND	<LOQ	ND	ND	218
3	J	ISA 0156830	18/06/2024	34	02/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	103	ND	ND	ND	ND	ND	ND
1	K	W5404195	January 2024	11	25/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	133	ND	ND	ND	ND	ND	ND
1	K	W5404198	January 2024	Northern Cape	25/01/2024	ND	ND	ND	ND	ND	881	289	74	1244	ND	ND	ND	ND	ND	ND	ND
2	K	W5413186	April 2024	Western Cape	29/04/2024	ND	ND	ND	ND	ND	20	ND	ND	20	116	ND	ND	ND	ND	ND	ND
2	K	W5413668	April 2024	Free State	29/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	K	W5421320	July 2024	Northern Cape	12/07/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	167	ND	ND	ND	ND	ND	ND
3	K	W5421536	July 2024	Northern Cape	12/07/2024	ND	ND	ND	ND	ND	87	20	ND	107	<LOQ	ND	ND	ND	ND	ND	ND
1	L	0048903	14/11/2023	8	20/11/2023	ND	ND	ND	ND	ND	59	<LOQ	ND	59	869	202	ND	70	ND	ND	ND
1	L	0048993	15/11/2023	8	20/11/2023	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	936	192	ND	63	ND	ND	ND
2	L	0063665	28/05/2024	8	03/06/2024	ND	ND	ND	ND	ND	30	ND	ND	30	ND	ND	ND	ND	ND	ND	51
2	L	0063667	28/05/2024	8	03/06/2024	ND	ND	ND	ND	ND	31	ND	ND	31	ND	ND	ND	ND	ND	ND	109
3	L	PAT0067197	June - July 2024	Free State	22/07/2024	ND	ND	ND	ND	ND	21	<LOQ	ND	21	382	<LOQ	ND	<LOQ	ND	ND	<LOQ
3	L	PAT0067200	June - July 2024	8	22/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	M	N 1675251	December 2023	Free State	05/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	65
1	M	N 1675252	December 2023	Free State	05/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	M	N1685598	April 2024	36	22/04/2024	ND	ND	ND	ND	ND	26	ND	ND	26	<LOQ	ND	ND	ND	ND	ND	ND
2	M	N1685599	April 2024	36	22/04/2024	ND	ND	ND	ND	ND	66	23	ND	89	ND	ND	ND	ND	ND	ND	ND
3	M	N 1699453	August 2024	36	19/08/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	<LOQ	ND	ND	ND	ND	ND	136
3	M	N 1699419	August 2024	36	19/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	51
1	N	68240207003	January 2024	Limpopo	12/02/2024	ND	ND	ND	ND	ND	639	173	47	859	<LOQ	ND	ND	ND	ND	ND	ND
1	N	68240207002	January 2024	Limpopo	12/02/2024	ND	ND	ND	ND	ND	472	129	38	639	ND	ND	ND	ND	ND	ND	ND

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	N	68240313003	March 2024	Limpopo	14/03/2024	ND	ND	ND	ND	ND	2718	796	251	3765	ND	ND	ND	ND	ND	ND	ND
2	N	68240313020	March 2024	Limpopo	14/03/2024	ND	ND	ND	ND	ND	4182	1328	514	6024	ND	ND	ND	ND	ND	ND	ND
3	N	68240606009	NS	36	07/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	N	68240704040	NS	35	08/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	97
1	O	E7	February 2024	Gauteng	09/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
1	O	E8	February 2024	Free State	09/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	O	E111	NS	Free State	06/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	232	ND	ND	<LOQ	ND	ND	403
2	O	E112	NS	Free State	06/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2361
3	O	E700	12/08/2024	34	13/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
3	O	E701	12/08/2024	34	13/08/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	<LOQ	ND	ND	ND	ND	ND	95
1	P	1359776	10/01/2024	KwaZulu Natal	15/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
1	P	1359774	10/01/2024	KwaZulu Natal	15/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
2	P	1382291	09/04/2024	28	16/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	110
2	P	1382295	09/04/2024	36	16/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
3	P	1399237	06/06/2024	36	14/04/2024	ND	ND	ND	ND	ND	159	ND	ND	159	253	ND	ND	<LOQ	ND	ND	94
3	P	1399239	06/06/2024	36	14/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	Q	1363786	January 2024	20	29/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	177	ND	ND	ND	ND	ND	<LOQ
1	Q	1363883	January 2024	19	29/01/2024	ND	ND	ND	ND	ND	216	68	<LOQ	284	146	ND	ND	ND	ND	ND	ND
2	Q	1382224	11/04/2024	33	12/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	123	ND	ND	ND	ND	ND	<LOQ
2	Q	1382520	11/04/2024	North West	12/04/2024	ND	ND	ND	ND	ND	31	ND	ND	31	<LOQ	ND	ND	ND	ND	ND	ND
3	Q	1399382	NS	North West	14/06/2024	ND	ND	ND	ND	ND	40	ND	ND	40	<LOQ	ND	ND	ND	ND	ND	89
3	Q	1399550	NS	North West	14/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	101	ND	ND	ND	ND	ND	1022

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	R	1364721	08/12/2023	10	02/02/2024	ND	ND	ND	ND	ND	129	43	ND	172	215	ND	ND	205	ND	ND	ND
1	R	1364722	26/01/2024	Free State	02/02/2024	ND	ND	ND	ND	ND	568	253	48	869	1822	240	ND	390	ND	ND	ND
2	R	1389158	20/04/2024	10	10/05/2024	ND	ND	ND	ND	ND	62	<LOQ	ND	62	254	ND	ND	<LOQ	ND	ND	ND
2	R	1389157	10/04/2024	10	10/05/2024	ND	ND	ND	ND	ND	285	82	<LOQ	367	269	ND	ND	<LOQ	ND	ND	ND
3	R	1410509	22/07/2024	Free State	25/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	R	1410508	22/07/2024	10	25/07/2024	ND	ND	ND	ND	ND	33	ND	ND	33	185	ND	ND	ND	ND	ND	ND
1	S	01-14/12/2023, 01-17/01/2024, 15/11-01/12/2023	NS	11	08/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	177	ND	ND	ND	ND	ND	ND
2	S	L0202	NS	11	07/06/2024	ND	ND	ND	ND	ND	64	ND	ND	64	320	ND	ND	ND	ND	ND	ND
3	S	L010	June - July 2024	11	12/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	T	141288	03/01/2024	29	08/01/2024	ND	ND	ND	ND	ND	80	32	ND	112	268	ND	ND	ND	ND	ND	298
1	T	141320	04/01/2024	29	08/01/2024	ND	ND	ND	ND	ND	41	<LOQ	ND	41	205	ND	ND	ND	ND	ND	396
2	T	143381	04/04/2024	31	10/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	129	ND	ND	ND	ND	ND	55
2	T	143380	04/04/2024	29	10/04/2024	ND	ND	ND	ND	ND	38	<LOQ	ND	38	197	ND	ND	ND	ND	ND	189
3	T	147061	01/07/2024	31	03/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
3	T	147062	01/07/2024	31	03/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	59
1	U	313573	NOV 2023 - JAN 2024	Free State	01/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	U	306759	NOV 2023 - JAN 2024	15	01/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	208	<LOQ	ND	ND	ND	ND	ND
2	U	328152	April 2024	Free State	02/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	141	ND	ND	ND	ND	ND	ND
2	U	325860	April 2024	28	02/05/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	ND
3	U	336029	June 2024	Imported Argentina	25/07/2024	ND	ND	ND	ND	ND	1003	331	115	1449	<LOQ	ND	ND	ND	ND	ND	<LOQ
3	U	339615	July 2024	Imported Argentina	25/07/2024	ND	ND	ND	ND	ND	1412	435	134	1981	ND	ND	ND	ND	ND	ND	96

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	V	SILO 153	29/01/2024	NS	31/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
1	V	SILO 66	09/12/2023	NS	31/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	50
2	V	SILO 83	31/03/2024	NS	26/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	180
2	V	SILO 88	12/04/2024	NS	26/04/2024	ND	ND	ND	ND	ND	54	<LOQ	ND	54	189	ND	ND	ND	ND	ND	145
3	V	SILO 88	11/07/2024	NS	12/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	W	115029	14/11/2023	8	21/11/2023	ND	ND	ND	ND	ND	420	151	33	604	275	<LOQ	ND	47	ND	ND	ND
2	W	120227	March 2024	Free State	12/03/2024	ND	ND	ND	ND	ND	53	<LOQ	ND	53	<LOQ	ND	ND	ND	ND	ND	ND
2	W	120230	March 2024	Eastern Cape	12/03/2024	ND	ND	ND	ND	ND	838	327	77	1242	155	<LOQ	ND	ND	ND	ND	ND
3	W	123927	June 2024	8	10/06/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	147	<LOQ	ND	ND	ND	ND	ND
3	W	123924	June 2024	8	10/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	X	258092	29/01/2024	34	13/02/2024	ND	ND	ND	ND	ND	142	45	ND	187	ND	ND	ND	ND	ND	ND	86
1	X	255027	20/11/2023	18	13/02/2024	ND	ND	ND	ND	ND	63	21	ND	84	ND	ND	ND	ND	ND	ND	ND
1	X	238959	01/12/2023	27	13/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	220	ND	ND	ND	ND	ND	100
2	X	264547	13/03/2024	18	17/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	X	264549	13/03/2024	21	17/05/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	ND
2	X	264554	13/03/2024	21	17/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	X	271101	22/05/2024	34	19/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	124
3	X	279326	05/08/2024	Free State	19/08/2024	ND	ND	ND	ND	ND	47	ND	ND	47	106	ND	ND	ND	ND	ND	115
3	X	278521	24/07/2024	28	19/08/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	<LOQ	ND	ND	ND	ND	ND	145
1	Y	352162	15/02/2024	30	19/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	452
1	Y	352260	16/02/2024	29	19/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	116
2	Y	355353	NS	Mpumalanga	28/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	120	ND	ND	ND	ND	ND	75

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	Y	355477	NS	29	28/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	211	ND	ND	ND	ND	ND	73
3	Y	362405 A	14/06/2024	Mpumalanga	21/06/2024	ND	ND	ND	ND	ND	26	ND	ND	26	<LOQ	ND	ND	ND	ND	ND	163
3	Y	362405 B	14/06/2024	Mpumalanga	21/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	124	ND	ND	ND	ND	ND	64
1	Z	734951	08/02/2024	25	04/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	Z	734952	08/02/2024	25	04/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	214	ND	ND	ND	ND	ND	ND
2	Z	000081	17/04/2024	25	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	Z	00082	10/04/2024	Free State	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
3	Z	000501	02/07/2024	Free State	16/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	Z	000502	02/07/2024	Free State	16/07/2024	ND	ND	ND	ND	ND	45	23	ND	68	ND	ND	ND	ND	ND	ND	ND
1	ZA	734953	08/02/2024	17	04/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
1	ZA	734954	09/02/2024	25	04/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	166
2	ZA	000083	16/04/2024	19	07/05/2024	ND	ND	ND	ND	ND	49	<LOQ	ND	49	152	ND	ND	ND	ND	ND	<LOQ
2	ZA	000084	23/04/2024	North West	07/05/2024	ND	ND	ND	ND	ND	96	28	ND	124	ND	ND	ND	ND	ND	ND	ND
3	ZA	000503	05/06/2024	19	16/07/2024	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND	ND
3	ZA	000504	11/06/2024	North West	16/07/2024	ND	ND	ND	ND	ND	177	78	ND	255	ND	ND	ND	ND	ND	ND	68
1	ZB	734955	19/02/2024	Mpumalanga	04/03/2024	ND	ND	ND	ND	ND	157	44	<LOQ	201	181	<LOQ	ND	ND	ND	ND	ND
1	ZB	734956	19/02/2024	33	04/03/2024	ND	ND	ND	ND	ND	271	103	24	398	ND	ND	ND	ND	ND	ND	ND
2	ZB	000085	16/04/2024	33	07/05/2024	ND	ND	ND	ND	ND	601	171	54	826	ND	ND	ND	<LOQ	ND	ND	ND
2	ZB	00086	19/02/2024	Limpopo	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	130	ND	ND	ND	ND	ND	262
3	ZB	000505	19/06/2024	Limpopo	16/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	426	<LOQ	ND	49	ND	ND	<LOQ
3	ZB	000506	03/07/2024	Limpopo	16/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	103
1	ZC	734957	07/02/2024	23	04/03/2024	ND	ND	ND	ND	ND	31	ND	ND	31	ND	ND	ND	ND	ND	ND	ND

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
1	ZC	734958	07/02/2024	22	04/03/2024	ND	ND	ND	ND	ND	56	22	ND	78	155	ND	ND	ND	ND	ND	ND
2	ZC	000087	04/04/2024	26	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	ZC	00088	16/04/2024	23	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	239	<LOQ	ND	ND	ND	ND	ND
3	ZC	000507	14/06/2024	25	16/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZC	000508	15/06/2024	Free State	16/07/2024	ND	ND	ND	ND	ND	299	131	22	452	403	<LOQ	ND	ND	ND	ND	ND
1	ZD	QP047738	NOV 2023 - JAN 2024	26	15/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	84
1	ZD	QP048123	NOV 2023 - JAN 2024	26	15/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	135	ND	ND	ND	ND	ND	<LOQ
1	ZD	QP 048654	NOV 2023 - JAN 2024	26	15/01/2024	ND	ND	ND	ND	ND	23	ND	ND	23	<LOQ	ND	ND	ND	ND	ND	91
2	ZD	QP 050136	March - April 2024	28	17/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	224	ND	ND	ND	ND	ND	418
2	ZD	QP 050494	March - April 2024	28	17/04/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	129	ND	ND	ND	ND	ND	199
3	ZD	JUNE SAMPLE	June - July 2024	Free State	14/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZD	JULY A SAMPLE	June - July 2024	Free State	14/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZD	JULY B SAMPLE	June - July 2024	Free State	14/08/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	ZE	A	23/11/2023	28	24/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
1	ZE	B	23/11/2023	28	24/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	120	ND	ND	ND	ND	ND	57
1	ZE	C	23/11/2023	28	24/11/2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
1	ZE	A, B & C	December 2023	28	06/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	182	ND	ND	ND	ND	ND	101
1	ZE	D, E & F	January 2024	28	06/02/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	103	ND	ND	ND	ND	ND	110
2	ZE	SAMPLE 1	NS	28	22/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	67
2	ZE	SAMPLE 2	NS	28	22/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
2	ZE	SAMPLE 3	19/03/2024	28	22/03/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	121	ND	ND	ND	ND	ND	51
2	ZE	SAMPLE A, B & C	NS	28	03/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	<LOQ	ND	ND	80

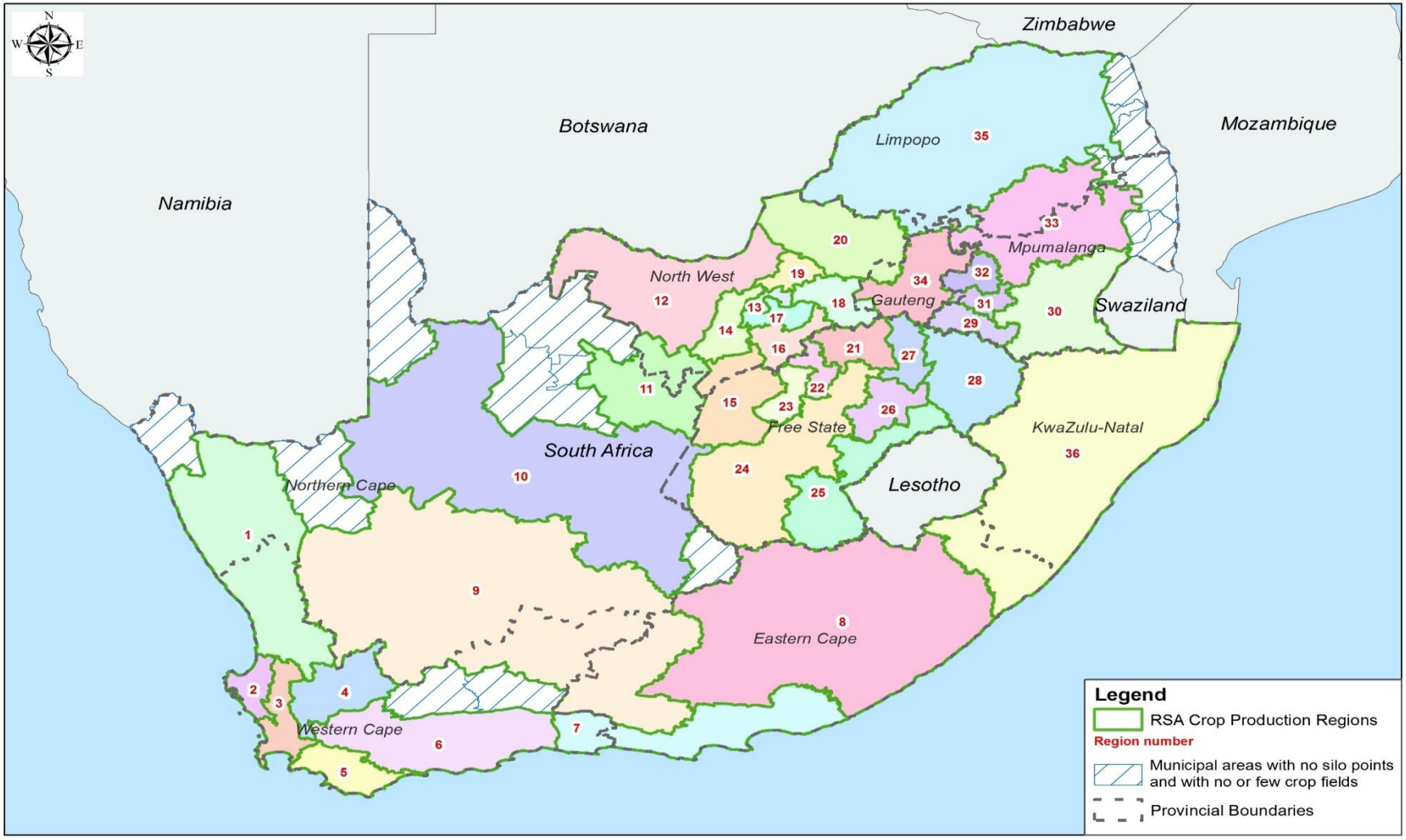
YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
3	ZE	A	21/06/2024	Free State	24/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	103	ND	ND	ND	ND	ND	<LOQ
3	ZE	B	21/06/2024	Free State	24/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	162	ND	ND	ND	ND	ND	<LOQ
3	ZE	C	21/06/2024	Free State	24/06/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	<LOQ
3	ZE	D	24/07/2024	Free State	22/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	108	ND	ND	ND	ND	ND	74
3	ZE	E	24/07/2024	Free State	22/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	ND
3	ZE	F	24/07/2024	Free State	22/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	56
1	ZF	TEL697875 +TEL698063	16+17 /01/2024	27	24/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	81
1	ZF	TEL697623+ TEL698239	12+17/01/2024	27	24/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	ZF	TEL697978	16/01/2024	Free State	24/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	683	100	ND	ND	ND	ND	<LOQ
2	ZF	TEL 711634	25/04/2024	28	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	54
2	ZF	TEL 711788	26/04/2024	Free State	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2	ZF	TEL 711789	26/04/2024	28	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	88
2	ZF	TEL 711905	29/04/2024	Free State	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ
2	ZF	TEL 711918	29/04/2024	Free State	07/05/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZF	TEL 723198	15/07/2024	Free State	23/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	109
3	ZF	TEL 723296	17/07/2024	Free State	23/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZF	TEL 723377	16/07/2024	Free State	23/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZF	TEL 723358	14/07/2024	Free State	23/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3	ZF	TEL 723256	15/07/2024	Free State	23/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1	ZG	SAMPLE 1	NOV 2023 - JAN 2024	NS	11/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	642	128	ND	<LOQ	ND	ND	ND
1	ZG	SAMPLE 2	NOV 2023 - JAN 2024	NS	11/01/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	657	141	ND	<LOQ	ND	ND	ND
2	ZG	CYCLE2-SAMPLE 4	MARCH - APRIL 2024	NS	30/04/2024	ND	ND	ND	ND	ND	30	ND	ND	30	230	ND	ND	ND	ND	ND	108

YELLOW MAIZE SAMPLE DESCRIPTION						Multi-Mycotoxin Results, µg/kg (ppb)														
						AFLATOXINS					FUMONISINS				DON	15-ADON	OTA	ZON	T2	HT2	Diplodia toxin
						AFB_1	AFB_2	AFG_1	AFG_2	TOTAL	FUM B_1	FUM B_2	FUM B_3	TOTAL							
Cycle number	Sender Report Code	Sender code	Sampling date / period	Production Region	Submission date	LOQ 5	LOQ 5	LOQ 5	LOQ 5		LOQ 20	LOQ 20	LOQ 20		LOQ 100	LOQ 100	LOQ 5	LOQ 20	LOQ 20	LOQ 20	LOQ 50
2	ZG	CYCLE2-SAMPLE 3	MARCH-APRIL24	NS	30/04/2024	ND	ND	ND	ND	ND	48	ND	ND	48	253	<100	ND	ND	ND	ND	93
3	ZG	CYCLE 3-SAMPLE 5	JUNE - JULY 2024	NS	05/07/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	<LOQ	ND	ND	ND	ND	ND	76
3	ZG	CYCLE 3-SAMPLE 6	JUNE - JULY 2024	NS		ND	ND	ND	ND	ND	ND	ND	ND	ND	114	ND	ND	ND	ND	ND	103

NS = Information not supplied.
ND = Not detected. <LOQ = Less than limit of quantitation. See Table 4

Annexure B

RSA Crop Production Regions



Annexure C

Summary of the SA mycotoxin regulations in food for human consumption and in feed for animal consumption

Mycotoxin	Human consumption [2,3]		Animal consumption [4]	
	Maximum allowable level	Commodity	Maximum allowable level	Commodity
Aflatoxin B_1	5 µg/kg	All foodstuff [2]	20 µg/kg	Groundnut, copra, palm kernel, cotton seed, maize and products derived from processing thereof.
Total Aflatoxin	10 µg/kg	All foodstuffs [2]	10 µg/kg	
Deoxynivalenol	2000 µg/kg	Cereal grains (wheat, maize, and barley) intended for further processing [3].	1000 – 5000 µg/kg	Feeding stuff on full ration basis for calves, cattle, pets, pigs, poultry.
	1000 µg/kg	Flour, meal, semolina, and flakes derived from wheat, maize, or barley, ready for human consumption [3] .		
Fumonisin $B_1 + B_2$	4000 µg/kg	Raw maize grain, the whole commodity, intended for further processing [3] .	-	-
	2000 µg/kg	Maize flour and maize meal, ready for human consumption [3].		
Fumonisin B_1	-	-	5000 - 50000 µg/kg	Feeding stuff on full ration basis for beef, fish, horses, pets, pigs, beef, poultry.
Ochratoxin A	-	-	50 - 200 µg/kg	Feeding stuff on full ration basis for beef, fish, horses, pets, pigs, beef, poultry.
Zearalenone	-	-	500 - 5000 µg/kg	Feeding stuff on full ration basis for claves, dairy cattle, piglets, pigs.