



PART 2

Indoor Airborne Mycotoxins

ANALYTICAL RESULTS TO DATE

By Debra Hammond

Background

As Rob has discussed in Part 1 of this series, we are analyzing airborne mycotoxin samples. We are comparing samples submitted against a data base collected and analyzed in exactly the same way every time. Our green result reflects the range of samples collected within homes that have no known history of mould or water damage. We have titled results falling into our green level as "Within background level". Our amber result is based upon a band that is above our green range with 50% of that green range added, and denotes an elevated level which may require further investigation. We have titled results falling into our Amber level as "Caution". Our red result is any result above the amber result. Results falling within this range are titled "Elevated". It is important to note however that, to date, there has been no safe limit established by regulatory authorities. Our goal is to be a part of correcting this in consultation with a panel of experts from the medical and other professions.

How do we know that any of these levels are safe?

Essentially, we don't know. All we can do is to report on our findings, to compare like with like in terms of the length and collection rate of our sample, and the like for like analysis of our samples. What we do know is that various mycotoxins have regulated and published levels acceptable within our commodities, or foods and feeds. These are generally measured in allowable parts per billion per tonne of a crop or other commodity. When we compare our results in parts per billion by volume of air, we know that many of our results are very high. When we talk of volume of air, we know that this volume of air is only a small sample of what potentially exists within a space or room. We also know that the occupation of a room can far exceed the timed sample collection and that the size of the room space will vary.

The "background" levels that we have established are collected from homes with no known history of water damage or mould colonies. The occupants of the homes where samples were collected have no known, or suspected, symptoms of any mould related adverse health conditions.

Our results highlight the importance of legislating acceptable and unacceptable levels within our built environments. We absolutely encourage the medical and associated professions to investigate these important findings.



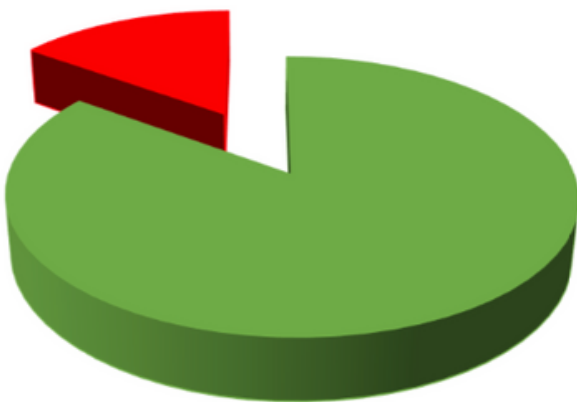
Statistics to date

The following tables show our statistics to date. It is important to note that these results do not include results used in the establishment of the "background" level. It is also important to note that these statistics are presented on their results only. As a Laboratory, it is our sole responsibility to analyze the samples as received. To date, we have been sampling for only 3 mycotoxins, Ochratoxin A, Aflatoxin Total, and T2/HT2. We will add more mycotoxins in time with Fumonisin being added from July 2022.

We confirm that all samples reported in the following statistics have been processed in exactly the same way to ensure consistency. We also confirm that the samples have been collected in exactly the same way, as confirmed by Chain of Custody documentation received from the submitter. Any samples received damaged have been omitted. 21st Global Labs uses ELISA methods to process our samples with all kits having manufacturer certifications.

These following statistics are current as at June 2022. Samples have been submitted from Australia, the United Kingdom, and the United States of America.

Ochratoxin A

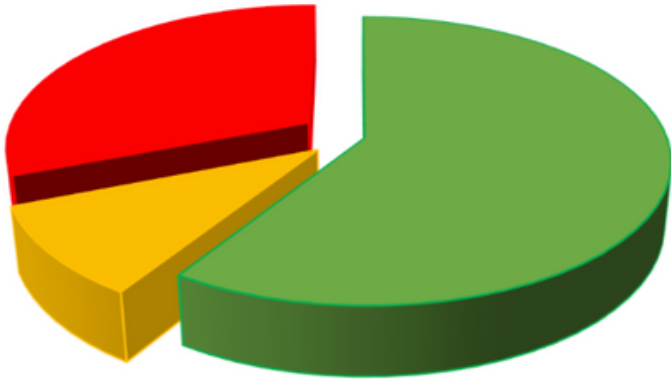


■ Within background level ■ Elevated

FIGURE 1 – OCHRATOXIN A

OF OUR TOTAL SAMPLES, TO DATE, 85% HAVE PROVEN TO BE WITHIN BACKGROUND LEVELS, WHILST THE REMAINING 15% HAVE EXCEEDED OUR CAUTIONARY LEVEL. NO SAMPLES HAVE FALLEN WITHIN TH CAUTIONARY LEVEL.

Aflatoxin Total



■ Within Background Level ■ Caution ■ Elevated

FIGURE 2 – AFLATOXIN TOTAL

OF OUR TOTAL SAMPLES, TO DATE, 59% HAVE PROVEN TO BE WITHIN BACKGROUND LEVELS, WHILST 10% ARE CONSIDERED CAUTIONARY, AND 31% ARE ELEVATED.

T2/HT2



■ Within background level ■ Caution ■ Elevated

FIGURE 3 – T2/HT2

OF OUR TOTAL SAMPLES TO DATE, 74% HAVE PROVEN TO BE WITHIN BACKGROUND LEVELS, WHILST 16% ARE CONSIDERED CAUTIONARY, AND 10% ARE ELEVATED.

Total Samples



■ Within background level ■ Exceed background level

FIGURE 4 – TOTAL SAMPLES

WE CAN SEE HERE THAT OF THE SAMPLES USED WITHIN OUR FIGURES, 57% OF OUR SAMPLES HAVE PROVEN TO BE ABOVE BACKGROUND LEVELS ON ONE OR MORE MYCOTOXINS.

Conclusion

Mycotoxins within our commodities are highly regulated to protect consumers from potential contamination of these dangerous substances. We will be supporting the push for an introduction of regulation regarding indoor airborne mycotoxins.

We would like to thank all of those who have been kind enough to submit samples for analysis for their ongoing support. We appreciate your contributions and acknowledge that this task would have been far more difficult without you.

As new licenced laboratories commence operation within overseas territories, information will be provided to our research partners for further investigation and development of case studies.