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# Quality Control Material

Certificate of Analysis

## Product Details

| Product Code: | Zearalenone Quality Control Material in Corn TMQC-Z100 | | | |
|---|---|---|---|---|
| Batch Code | Certification Date | Expiration Date | Quantity | Storage |
| Z-C-60020 | November 2024 | November 2029 | 100g | ≤ 8˚C |

| Compound | Limit of Quantification | Mean (ppb) | Mean (SI Units) |
|---|---|---|---|
| Zearalenone | 12.5 ppb | 261.2 | (µg/kg) |

| | | |
|---|---|---|
| **Total Zearalenone** | 261.2 | (µg/kg) |
| **Std dev** | 27.5 | (µg/kg) |
| **%CV or %RSD** | 10.5% | |

| Standard Deviation Ranges | | |
|---|---|---|
| 1sd Range | 2sd Range | 3sd Range |
| 233.7 ppb to 288.7 ppb | 206.2 ppb to 316.2 ppb | 178.7 ppb to 343.7 ppb |

| | |
|---|---|
| **Uncertainty k=2** | 83.2 ppb |
| **Expanded measurement of uncertainty (k=2)** | 31.8% |
| **Uncertainty Range** | 178.0 ppb to 344.4 ppb |

**Method reference –** Internal SOP-14-168

**General information**

This material represents a food/feed agricultural product commonly contaminated with mycotoxins. It has been ground to a fine consistency (30 mesh; 0.595 mm) and thoroughly homogenized to ensure uniform distribution of the analyte(s). Samples are analyzed numerous times over the course of several analytical runs utilizing the reference methods listed above. The results are averaged and standard deviation ranges as well as measurement of uncertainty are calculated. All of these are represented above. This data represents the best estimate of the true value as obtained by one laboratory utilizing one method.

**Method Used for Certification**

To obtain the results above, 30 different extracts were prepared on a minimum of 5 different analyses dates. Multi-mycotoxin LC-MS/MS Zearalenone samples were extracted with 84/16 acetonitrile/water for 1 hour on an Eberbach shaker. Samples were analyzed by the method references above. This result represents the results you would find from one laboratory performing one specific method repeatedly over the course of several days. The standard deviation ranges noted above represent results you would anticipate with 68% (1 sd range), 95% (2 sd range) and 99% (3 sd range) confidence with the method specifics listed above. Additionally, uncertainty has been calculated and the range is also reported above. These ranges will allow you, the end user to determine which range best suits your individual requirements. Results of this sample may vary with methodology and extraction procedures utilized in your laboratory. These results relate only to the sample material listed above. The value is the best estimate of the true value based on these multiple analyses.

**Minimum sample size**

Results shown above represent 12.5 gram extractions. Increasing the sample size extracted may provide results with decreased ranges. Less than 5.0 gram sample extractions are not recommended.

**Intended use**

This material is intended for laboratory use only and is not intended for animal or human consumption. Quality Control Materials can be used for laboratory quality control, training tools, method comparisons, method validations, intra laboratory comparisons, inter laboratory comparisons, method bias indicators, verification of laboratory performance, and method troubleshooting by HPLC, GC, GCMS, LCMSMS.

**Storage**

Material should be stored at or below 8° C in the original foil zippered pouch. After opening, ensure bag is completely sealed prior to returning to storage. Trilogy Analytical Laboratory is not responsible for changes in the product due to improper storage of material.

**Instructions for use**

Allow material to come to room temperature before use to prevent moisture condensation in packet. Recommended minimum subsample is 5.0 grams. Samples should be sealed promptly and returned to recommended storage conditions after use. The expiration date of this material represents the most accurate expiration based on current knowledge and applies only to product that has been stored and handled correctly.

**Safety precautions**

Good laboratory practices should be observed while handling all Trilogy Quality Control Materials. Follow the recommended precautionary measures (OSHSA 29 CFR 1910.1450) for handling chemicals and powders. Avoid contact with eyes, skin, and clothing. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. This product is for laboratory use only and is not intended for animal or human consumption. For specific product Safety Data Sheets, contact Trilogy Analytical Laboratory.

**Level of homogeneity**

Mycotoxins are known to exhibit extreme inhomogeneity. These samples have been ground to a fine particle size (30 mesh; 0.595 mm), to provide the best sample homogeneity available. A minimum sub-sample of 5.0 grams must be extracted to ensure a sample representative of the larger sample received. If smaller samples are taken, results may fall out of range due to sample variability. Likewise, extraction of larger sample sizes may improve the variability of results.

**Uncertainty**

All calculations of expanded uncertainty (k = 2) are based on the criteria outlined in the ISO Guide to the Expression of Uncertainty in Measurement (GUM). Expanded combined uncertainty, which is calculated and presented for all Quality Control Materials, represents an estimated standard deviation equal to the root sum squared of all total inherent variance of pertinent components expanded by a factor of 2 (k = 2). The expanding factor “k” allocates a coverage at which a 95% confidence level (k = 2) can be obtained. Within the Certificate of Analysis for each Quality Control Material an expanded range for the product in accordance with the uncertainty is included. For additional information pertaining to individual uncertainty components affecting the final result of Trilogy Quality Control Material, please contact Trilogy Analytical Laboratory.

**Further information**

Trilogy Quality Control Materials are for laboratory use only. Trilogy does not make any warranties, expressed or implied, in connection to these materials, other than that the product meets the quality control specifications at Trilogy Analytical Laboratory. Each purchaser should determine the best methods and suitability for this product to meet their specific needs. Trilogy does warranty that this product meets the control standards set by Trilogy Analytical Laboratory. This product is a Quality Control Material, not a Certified Reference Material under the Trilogy ISO 17034:2016 Scope of Accreditation.



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Vice President of Operations

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Version 1