aokin *ReferenceMatrixMaterial*

DON

for analysis of Deoxynivalenol (DON) in Wheat
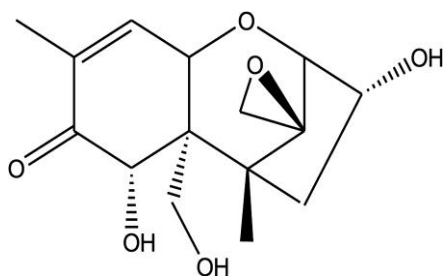
Deoxynivalenol (DON)

Specification

Lot No.	002146301201014275
Matrix Type	Wheat
Analyte	Deoxynivalenol (DON)
Weight/Volume	50 g
Storage	-18 °C
Retest	06/2024

	Concentration x_{PT} [µg/kg]	data points n	satisfactory range $x_{PT} \pm 2\,\sigma_{PT}$ [µg/kg]	uncertainty* $2\,u(x_{PT})$ [µg/kg]
Deoxynivalenol	< 290**	6	nd	nd

*Expanded uncertainty with k=2 for approximately 95% level of confidence (PA/PH/OMCL(18)153R1 CORR Evaluation of Measurement Uncertainty - Annex 2.5).

**Results have a high uncertainty, arithmetic mean shown; satisfactory range estimated by coefficient of variation of 37,21 % for Deoxynivalenol.

Comments

aokin reference matrix material is naturally contaminated and homogenized. Concentration of the analyte is determinate in a proficiency round. Unweighted mean value of the means of accepted sets of data, each set being obtained in a different laboratory and/or with a different method of determination such as HHPLC-MS/MS, HPLC/DAD, HPLC/FLD, LC-MS/MS, HPLC/UV.

The certified value and its uncertainty are traceable to the International System of Units (SI) as chemical mass fraction as µg/kg. The assigned value, the satisfactory range and the expanded uncertainty are given.

The minimum amount of sample to be used is 10 g.

Calculation of the assigned value x_{PT}

The Assigned Value is the value attributed to a particular property of interlaboratory proficiency test (definition from ISO13528:2016). x_{PT} is derived from participants quantitative results obtained with confirmatory analysis. The procedure for determining is from the Algorithm A (ISO 13528:2016) or from the median.

The standard uncertainty is expanded by a factor f = 1,25 and is calculated as:

$$u(x_{PT}) = f\ {}^{\sigma_{PT}}/{\sqrt{n}}\ \text{(uncertainty of the characterization)}$$

where:
- σ_{PT} is the robust estimate of the participant standard deviation;
- $\sigma_{PT} = b \cdot x_{PT}$ where b is the relative robust estimate of the participant standard deviation
- n is the number of participants used in calculating the robust assigned values.

The satisfactory range is calculated from the expanded (k=2) standard deviation of the proficiency assessment:
The satisfactory range equals $x_{PT} \pm 2\,\sigma_{PT}$.