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Fertilizers - Comparison of the CEN/TC 260/WG 7 ring test results with tolerances given in the Regulation (EC) Nr 2003/2003 Annex II and conclusions

Engrais - Comparaison des résultats des essais interlaboratoires menés par le CEN/TC 260/WG 7 avec les tolérances données dans le règlement (CE) n°2003/2003 Annexe II et conclusions

Düngemittel - Vergleich der Ringversuchsergebnisse der CEN/TC 260/WG 7 mit den in der Verordnung (EG) Nr. 2003/2003 Anhang II angegebenen Toleranzen und Schlussfolgerungen

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Foreword

This document (CEN/TS 16490:2013) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN.

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Introduction

Following a request from the European Commission (Mandate M/418), an evaluation was done of the existing tolerances as per Regulation (EC) No. 2003/2003. Input for this evaluation was derived from the precision data obtained via the several ring tests that have been made according to Mandate M/335.

As to exclude eventual interference from effects due to inhomogeneity of physically blended grades, no blends have been included in the ring tests; test samples have been limited and chosen as to be representing some main product grades sold within the EU.

The statistical evaluation has been done in line with ISO 5725-2 and whenever deemed necessary for appropriate evaluation and interpretation of the test results, some extra statistical evaluation was made on the test data.

As to judge to what extent problems arise in case of enforcement controls, some field data have been analysed as to verify to what extent actual conflicts exist in between test results from official controls and applied tolerances.

The evaluation revealed no real need for adjustments to tolerances as they relate to analytical variability. However, it should be emphasised that the tolerances given in Regulation 2003/2003 relate not only to analytical variability but to the total variability including allowances for sampling error and product variability.

Finally if the European Commission sees the necessity of further method improvements, then one could consider a project entitled to develop an alternative method. Only following a full evaluation including ring testing, a final judgment can be made if the newly developed method could be a candidate for replacement of the existing one(s) assuming better accuracy data.

1 Scope

In Regulation (EC) No. 2003/2003 [2] tolerance limits are mentioned for nutrient contents in mineral fertilizers (Annex II of Regulation (EC) No. 2003/2003) as well as prescribed methods for control purposes (Annex IV of Regulation (EC) No. 2003/2003).

Prior to the work done by CEN/TC 260 following Mandate M/335, no statistical data were available for the official analytical methods to be applied. Due to the standardization work done for this mandate, statistical data have been generated as ring testing was a major topic in this mandate.

This Technical Specification describes to what extent the presently applied tolerances are in line with the obtained precision data from the analytical methods studied.

The purpose of this document is to give feedback on the applied tolerances within Regulation (EC) No. 2003/2003 based on the method evaluation done as an outcome of the work executed by CEN/TC 260/WG 7 according to Mandate M/335. This evaluation of the tolerances was part of Mandate M/418.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5725-1:1994, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
tolerance (T)
variation including manufacturing, raw materials, sampling and analytical methods

3.2
repeatability limit (r)
the value less than or equal to which the absolute difference between two test results obtained under repeatability conditions may be expected to be with a probability of 95 %

[SOURCE: ISO 5725-1:1994]

Note 1 to entry: In other words, r is the minimum difference between two results in order to be statistically different, under repeatability conditions, at a 95 % probability level.

3.3
reproducibility limit (R)
the value less than or equal to which the absolute difference between two test results obtained under reproducibility conditions may be expected to be with a probability of 95 %

[SOURCE: ISO 5725-1:1994]

Note 1 to entry: In other words, R is the minimum difference between two results in order to be statistically different, under reproducibility conditions, at a 95 % probability level.