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EN 17725

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English Version

Plant biostimulants - Determination of the quantity (indicated by mass or volume)

Biostimulants des végétaux - Détermination de la
quantité (indiquée en masse ou en volume)

Pflanzen-Biostimulanzien - Bestimmung der Menge
(durch Angabe der Masse oder des Volumens)

This European Standard was approved by CEN on 26 August 2024.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 17725:2024) has been prepared by Technical Committee CEN/TC 455 “Plant Biostimulants”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2025, and conflicting national standards shall be withdrawn at the latest by May 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 17725:2022.

EN 17725:2024 includes the following significant technical changes with respect to CEN/TS 17725:2022:

- Clauses 4 and Clause 6 have been updated in order to express requirements;
- Annex ZA has been added.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

EN 17725:2024 (E)**Introduction**

The European Committee for Standardization (CEN) was requested by the European Commission (EC) to draft European Standards or European Standardization deliverables to support the implementation of Regulation (EU) 2019/1009 of 5 June 2019 [1] laying down rules on the making available on the market of EU fertilising products (“FPR” or “Fertilising Products Regulation”).

This standardization request, presented as SR M/564 and relevant amendments, also contributes to the Communication on “Innovating for Sustainable Growth: A Bio economy for Europe”. The interest in plant biostimulants has increased significantly in Europe as a valuable tool to use in agriculture. Standardization was identified as having an important role in order to promote the use of biostimulants. The work of CEN/TC 455 seeks to improve the reliability of the supply chain, thereby improving the confidence of farmers, industry, and consumers in biostimulants, and will promote and support commercialisation of the European biostimulant industry.

WARNING — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted in accordance with this document be carried out by suitably trained staff.

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1 Scope

This document specifies the methods to be used for the determination of quantity of plant biostimulants sold or offered for sale.

This document specifies the methods to be used for the determination of quantity of solid and liquid forms of plant biostimulants in packages, containers or in bulk.

This document is not applicable to the quantity determination of: inorganic, organic and organo-mineral fertilizers, liming materials, inhibitors, soil improvers and growing media.

This document is applicable to the blends of fertilizing products where a blend is a mix of at least two of the following component EU fertilising products categories: Fertilizers and Plant Biostimulants, and where the following category Plant Biostimulants is the highest % in the blend by mass or volume, or in the case of liquid form by dry mass. If Plant Biostimulants is not the highest % in the blend, the European Standard for the highest % of the blend applies. In case a blend of fertilizing products is composed of components in equal quantity or in case the component EU fertilising products used for the blend have identical formulations¹, the user decides which standard to apply.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 17702-1:2024, *Plant biostimulants — Sampling and sample preparation — Part 1: Sampling*

EN 17724:2024, *Plant biostimulants — Terminology*

EN 45501:2015, *Metrological aspects of non-automatic weighing instruments*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17724:2024 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

liquid form

suspension or solution

Note 1 to entry: “Based on Regulation (EU) 2019/1009 [1], Chapter 1, Article 2, (6).

¹ An example of such a blend is a product with 2 claimed functions consisting of a non-microbial plant biostimulant and an organic fertilizer composed of 1kg/kg of plant biostimulant from seaweed.

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3.2

suspension

two-phase dispersion in which solid particles are maintained in suspension in the liquid phase

Note 1 to entry: “Based on Regulation (EU) 2019/1009 [1], Chapter 1, Article 2, (6).

3.3

solution

liquid that is free of solid particles, or a gel and includes pastes

Note 1 to entry: “Liquids” include plant biostimulants in liquid form and solutions.

Note 2 to entry: The definition is based on Regulation (EU) 2019/1009 [1], Chapter 1, Article 2, (6).

3.4

solid form

form characterized by structural rigidity and resistance to changes of shape or volume and in which atoms are tightly bound to each other, either in a regular geometric lattice (crystalline solids) or in an irregular manner (an amorphous solid)

Note 1 to entry: The definition is based on Regulation (EU) 2019/1009 [1], Chapter 1, Article 2, (7).

3.5

weighing instrument

instrument serving to determine the mass of a body by using the action of gravity on that body

3.6

non-automatic weighing instrument

weighing instrument requiring the intervention of an operator during the weighing process to decide that the weighing result is acceptable

3.7

nominal quantity

declared mass or volume of the contents of a package or container indicated on or with the package or in documentation associated with the contents

3.8

net quantity

actual mass or volume of the contents of a package

3.9

gross quantity

mass or volume of the package

3.10

bulk

plant biostimulant that is not in a package

3.11

package

container and plant biostimulant contained therein which is ready for delivery or delivered and where the packaging remains with the material after delivery

3.12

container

object in which a plant biostimulant is delivered

EXAMPLE Bottle, box, bag, intermediate bulk container, road tanker, lorry.

4 Method of quantity determination

4.1 Quantity declaration

The quantity in terms of mass or volume of a plant biostimulant shall be at least the nominal quantity stated on the container or documentation associated with the plant biostimulant.

NOTE National regulations that specify the unit of measurement (weight or volume) used for the quantity declaration exist.

4.2 Determination of quantity of the plant biostimulant in solid and liquid forms when sold by mass

4.2.1 Apparatus

A suitable weighing instrument.

“Suitable” means of a type sufficiently accurate to determine the actual quantity of the plant biostimulant (gross weight) and mass of the packaging used so that a net quantity of the contents can be determined.

“Suitable type” means an instrument that complies with the requirements of EN 45501:2015.

“Sufficiently accurate” means that the scale intervals and sensitivity of the instrument are appropriate to detect the quantity of the plant biostimulant and of the package/wrapping. This will depend on the nominal quantity of the plant biostimulant being weighed.

An indication of appropriate maximum scale interval is given in Annex A.

4.2.2 Equipment checks

Before using the weighing instrument to establish the quantity of a plant biostimulant, the machine shall be checked for accuracy with weights (such as those which comply with OIML R111 (www.oiml.org)). The accuracy tolerance shall be one third of the maximum error for the weighing instrument to be used. The tests laid down in EN 45501:2015 shall be used.

A record of the results of the tests shall be kept.

Because half a graduation can be read on an analogue indicator weighing instrument mass display, digital instruments shall need to indicate 50 % of those for an analogue graduation.

4.2.3 Method

4.2.3.1 Packages up to 25 kg

The package shall be placed on the weighing plate of the weighing instrument and the mass shown (x) shall be recorded.

Weigh 10 randomly selected empty containers (non-destructive testing) or, if empty containers are not available, empty 10 randomly selected containers already weighed after ensuring no plant biostimulant remains in or on the containers (destructive testing).

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NOTE Because of the small mass of the containers, a more sensitive weighing instrument can be used for this operation (see Annex A).

Record the masses and obtain an average mass of the containers (y). Record the calculation and result.

Subtract the mean mass of the container from the gross quantity of each packed plant biostimulant and calculate and record each net quantity (z) using Formula (1).

$$z = x - y \quad (1)$$

where

z is the net quantity by mass of the contents of an individual package in g;

x is the gross quantity by mass of an individual package in g;

y is the mean mass of the empty containers in g.

4.2.3.2 Packages/containers more than 25 kg

These are containers which cannot be manually handled and require larger capacity weighing instruments to ascertain their gross weight.

The weighing instrument used shall be suitable for the mass of the plant biostimulant in the container in accordance with 4.2.1 and Annex A.

Otherwise, the procedure given in 4.2.3.1 above shall be followed with the exception of the number of empty containers to be weighed which shall be reduced to 5.

4.2.3.3 Plant biostimulant sold loose and in bulk**4.2.3.3.1 Plant biostimulant to be delivered in transport containers**

The plant biostimulant shall be loaded into some type of transport (vehicle, large container or other suitable method of containing the plant biostimulant). Use a weighing instrument suitable for the amount in the consignment in accordance with 4.2.1 and Annex A. The transport shall be weighed empty and the mass (m_t) recorded. The plant biostimulant shall then be placed in the transport container and the gross quantity (m_g) recorded. The net quantity (m_n) of the plant biostimulant shall then be calculated using Formula (2).

$$m_n = m_g - m_t \quad (2)$$

where

m_n is the net quantity of the plant biostimulant in g;

m_g is the gross quantity of the plant biostimulant and transport container in g;

m_t is the mass of the transport container empty in g.

4.2.3.3.2 Plant biostimulant to be delivered in large quantities

One of the following methods shall be used.

Method 1 (using road vehicles)

If the plant biostimulant is loaded or discharged using a number of road vehicles each should be dealt with in accordance with 4.2.3.3.1 above and the individual net masses totalled together.