



BSI Standards Publication

## Plant biostimulants — Determination of dry matter

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## National foreword

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The UK participation in its preparation was entrusted to Technical Committee EH/4/-/7, Plant Biostimulants.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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### Amendments/corrigenda issued since publication

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ICS 07.080

English Version

## Plant biostimulants - Determination of dry matter

Biostimulants des végétaux -  
Détermination de la matière sèche

Biostimulanzien für die pflanzliche Anwendung  
- Bestimmung der Trockenmasse

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## European foreword

This document (CEN/TS 17704:2022) has been prepared by the Technical Committee CEN/TC 455 “Plant biostimulants”, the secretariat of which is held by AFNOR.

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 has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

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 announce this Technical Specification: 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, Turkey and the United Kingdom.

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## Introduction

This document was prepared by the experts of CEN/TC 455 “Plant Biostimulants”. 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 laying down rules on the making available on the market of EU fertilizing products (“FPR” or “Fertilising Products Regulation”).

This standardization request, presented as M/564, also contributes to the Communication on “Innovating for Sustainable Growth: A Bio economy for Europe”. The Working Group 4 “Other safety parameters”, was created to develop a work program as part of this request. The technical committee CEN/TC 455 “Plant Biostimulants” was established to carry out the work program that will prepare a series of standards. The interest in 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. The preparation of this document is based on a standardization request to CEN by the European Commission and the European Free Trade Association (Mandate M/564) concerning the modernization of methods of analysis of fertilizers within the framework of Regulation (EU) 2019/1009 of the European Parliament and of the Council.

In case of the analysis of plant biostimulants, water is usually not considered a part of the sample and results are generally related to dry matter, which can be calculated by determining the dry residue (dry matter fraction).

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

**IMPORTANT – It is absolutely essential that tests conducted according to this document are carried out by suitably trained staff.**

## 1 Scope

This document specifies the procedure for the determination and calculation of the dry matter fraction of plant biostimulants for which the results of performed analysis are to be calculated to the dry matter basis.

This document is also applicable to the blends of fertilizing products where plant biostimulants are the main part of the blend. Otherwise, the Technical Specification for the main part of the blend applies.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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

### 3.1

#### **dry residue**

remaining mass fraction of a sample after a drying process at 105 °C under specified conditions

### 3.2

#### **dry matter fraction**

mass fraction of a sample excluding water calculated by the determination of dry residue

## 4 Principle

The samples are dried to a constant mass in an oven at  $(105 \pm 2)$  °C. The difference in mass before and after the drying process is used to determine dry matter. This method applies to solid samples and samples which become solid during the drying process.

## 5 Sampling and sample preparation

Sampling and sample preparation are not part of this Technical Specification. A recommended sampling method is given in CEN/TS 17702-1 and a sample preparation method is given in CEN/TS 17702-2.

## 6 Interferences

The samples can change during the drying process, e.g. by absorption of carbon dioxide in the case of alkaline samples, or of oxygen by reducing substances. Volatile compounds evaporating at 105 °C are expressed as water using this procedure.

## 7 Reagents

1) **Sand**, CAS 14808-60-7, e.g. AnalaR NORMAPUR®<sup>1)</sup> purified by acid and calcinated from VWR™, or equivalent.

## 8 Apparatus

**8.1 Drying system** thermostatically controlled and capable of maintaining temperature of  $(105 \pm 2)$  °C.

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1) AnalaR NORMAPUR® is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by CEN of this products.