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BSI Standards Publication

Plant biostimulants — Determination of the pH for liquid microbial plant biostimulants/pH in microbial products — Determination of pH

bsi.

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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English Version

Plant biostimulants - Determination of the pH for liquid microbial plant biostimulants/pH in microbial products - Determination of pH

Biostimulanzien für die pflanzliche Anwendung - Bestimmung des pH-Wertes für flüssige mikrobielle Biostimulanzien für die pflanzliche Anwendung/pH-Wert in mikrobiellen Produkten - Bestimmung des pH-Wertes

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European foreword

This document (CEN/TS 17721:2022) has been prepared by 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.

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 the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising 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”. Working Group 5 “Labelling and denominations” was created to develop a work program as part of this standardization request.

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.

Liquid microbial plant biostimulants have a pH optimal for contained microorganisms and for plants [1].

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.

1 Scope

This document specifies a method for laboratory measurement of the pH value in liquid microbial plant biostimulants, using pH electrodes with a glass membrane.

From the scope of this document plant biostimulants other than microbial plant biostimulants are excluded because there is no essential requirement in the Regulation (EU) 2019/1009 [1] for measuring the pH of non-microbial plant biostimulants.

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.

CEN/TS 17702-1, *Plant biostimulants - Sampling and sample preparation - Part 1: Sampling*

CEN/TS 17702-2, *Plant biostimulants - Sampling and sample preparation - Part 2: Sample preparation*

CEN/TS 17724, *Plant biostimulants - Terminology*

EN ISO 3696:1995, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TS 17724 and the following apply.

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

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
pH
measure for the acidic or basic reaction of an aqueous solution or dispersion

Note 1 to entry: Notation of pH: the p and the H are vertically on one line.

Note 2 to entry: The acidic reaction is determined by the activity of the existing hydrogen ions. The basic reaction is determined by the activity of the existing hydroxide ions. The direct relationship between the activities of the hydrogen ions and the hydroxide ions is described by the ionic product of the water.

3.2
pH value
decadal logarithm of the hydrogen ion activity multiplied with (–1)