

STN	Rastlinné biostimulátory Odber a príprava vzoriek Časť 1: Odber vzoriek	STN EN 17702-1 46 5603
------------	--	--

Plant biostimulants - Sampling and sample preparation - Part 1: Sampling

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/25

Obsahuje: EN 17702-1:2024

Oznámením tejto normy sa ruší
STN P CEN/TS 17702-1 (46 5603) z júla 2022

140014

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2025
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii
v znení neskorších predpisov.

EUROPEAN STANDARD

EN 17702-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2024

ICS 65.080

Supersedes CEN/TS 17702-1:2022

English Version

Plant biostimulants - Sampling and sample preparation - Part 1: Sampling

Biostimulants des végétaux - Échantillonnage et
préparation des échantillons - Partie 1 :
Échantillonnage

Pflanzen-Biostimulanzien - Probenahme und
Probenvorbereitung - Teil 1: Probenahme

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

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 18 December 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 17702-1:2024 (E)

Contents		Page
European foreword		4
Introduction		5
1	Scope	7
2	Normative references	7
3	Terms and definitions	7
4	Sampling plans and quantitative data	9
4.1	Principle	9
4.2	Sampling plans	9
4.2.1	Determination of the number of sampling units which form the sampled portion	9
4.2.2	Identification of the sampling units to be sampled	10
4.2.3	Collection of incremental samples	10
4.3	Quantitative data	10
4.3.1	Mass/volume of incremental samples	10
4.3.2	Mass/volume of combined/reduced samples	10
4.3.3	Mass/volume of final sample	10
5	Incremental sampling methods	11
5.1	General	11
5.2	Solid plant biostimulants in packages – Reduction method using a rotary mechanical sample divider	11
5.2.1	General	11
5.2.2	Principle	11
5.2.3	Apparatus	11
5.2.4	Procedure	12
5.2.5	Precautions	13
5.3	Solid plant biostimulants in packages – Reduction method using a riffle divider	13
5.3.1	General	13
5.3.2	Apparatus	13
5.3.3	Procedure	14
5.4	Sampling of solid plant biostimulants in packages – using a spear	15
5.4.1	General	15
5.4.2	Apparatus	15
5.4.3	Procedure	16
5.5	Sampling of solid plant biostimulants in packages – Manual method	17
5.6	Sampling of liquid plant biostimulants	18
5.6.1	General	18
5.6.2	Apparatus	18
5.6.3	Procedure	18
6	Reduction of combined sample	19
6.1	General	19
6.2	Solid plant biostimulants	19
6.2.1	General	19
6.2.2	Riffle divider	19
6.2.3	Coning and quartering	19
6.3	Liquid plant biostimulants	20

6.3.1	Apparatus	20
6.3.2	Procedure	20
7	Division into final samples	20
8	Practical arrangements for final (laboratory) samples	20
8.1	General	20
8.2	Containers	21
8.3	Sealing of containers	21
8.4	Labelling of final samples	21
8.5	Dispatch of the final sample	21
8.6	Storage of final samples	21
9	Sampling report	21
9.1	General	21
9.2	Essential information	22
9.3	Additional information	22
	Annex A (informative) Examples of rotating sample dividers	23
	Annex B (normative) Test for bias in a rotary divider	26
	Annex C (informative) Examples of apparatus for sampling of liquid plant biostimulant ...	27
	Annex D (informative) Methods of mixing for liquid plant biostimulants	29
D.1	General	29
D.2	Small containers	29
D.2.1	Hand shaking	29
D.2.2	Rocking	29
D.3	Containers bigger than 20 l and up to 1 000 l	29
D.3.1	Rocking in a see-saw fashion	29
D.3.2	Rolling to and fro	29
D.3.3	Mechanically driven drum shaker or roller	29
D.3.4	Mechanical mixing	29
D.3.5	Hand mixing	31
D.3.6	Compressed gas	32
D.4	Precautions for sampling of multi-phase liquids	32
D.5	Precautions against static electricity	33
	Bibliography	35

EN 17702-1:2024 (E)**European foreword**

This document (EN 17702-1:2024) 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 17702-1:2022.

EN 17702-1:2024 includes the following significant technical changes with respect to CEN/TS 17702-1:2022:

- Introduction, Scope, Terms and definitions, Figures, and Bibliography have been updated.

The EN 17702 series, *Plant biostimulants — Sampling and sample preparation*, consists of the following parts:

- *Part 1: Sampling;*
- *Part 2: Sample preparation.*

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.

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.

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 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 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.

This document covers the following aspects of sampling, derived from EN 1482-1:2024 and documents indicated. This document is presented in a form adapted to the specificity of plant biostimulants. The titles of the standards are given in the Bibliography.

From a technical point of view, sampling is generally specified as the withdrawal operation, of the part of a “mass”, of such dimensions that the properties found in the sample taken, are, within the limits of statistical acceptability, the same as those of the mass of origin (representativeness of the sample). In other words, the ultimate purpose of sampling is to allow the collection of representative portions of plant biostimulants to be subject to analysis. Therefore, it fundamentally affects the significance and reliability of the analytical results themselves.

Figure 1 gives a schematic diagram of the sampling and sample preparation process.

EN 17702-1:2024 (E)

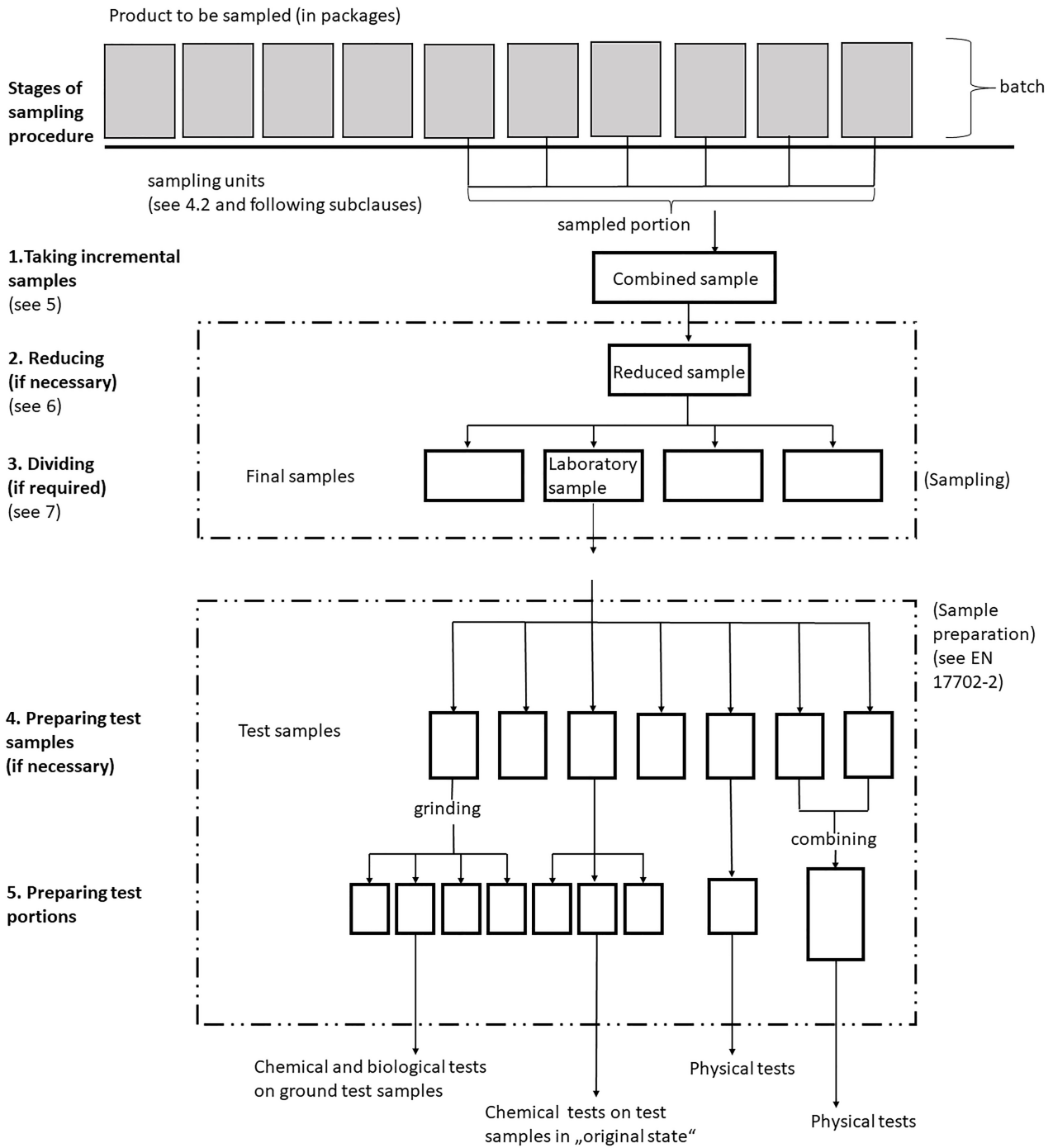


Figure 1 — Schematic diagram of sampling process for solid plant biostimulants

1 Scope

This document specifies sampling plans and methods of representative sampling of plant biostimulants to obtain samples for physical, chemical and biological analysis.

It is applicable to the sampling of batches of plant biostimulants supplied or ready for supply to third parties, as such, or in smaller batches.

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: Fertilizers/Liming Materials/Soil Improvers/Growing Media/Inhibitors/Plant Biostimulants, and where the following category Plant Biostimulants is the highest percentage in the blend by mass or volume, or in the case of liquid form by dry mass. If Plant Biostimulants is not the highest percentage in the blend, the European Standard for the highest percentage 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.

This document is intended to be used by manufacturers, buyers and competent authorities to obtain samples prior to transport and supply it to a laboratory for testing.

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 1482-1:2024, *Fertilizers, liming materials and inhibitors — Sampling and sample preparation — Part 1: General sampling provisions*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

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