SLOVENSKI STANDARD
oSIST prEN 17724:2023

01-maj-2023

Rastlinski biostimulanti - Terminologija

Plant biostimulants - Terminology

Biostimulanzien für die pflanzliche Anwendung - Terminologie

Biostimulants des végétaux - Terminologie

Ta slovenski standard je istoveten z: **prEN 17724**

ICS:

01.040.65	Kmetijstvo (Slovarji)	Agriculture (Vocabularies)
65.080	Gnojila	Fertilizers

oSIST prEN 17724:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 17724

March 2023

ICS 65.080

Will supersede CEN/TS 17724:2022

English Version

Plant biostimulants - Terminology

Biostimulants des végétaux - Terminologie

Biostimulanzien für die pflanzliche Anwendung - Terminologie

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 455.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

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

Ref. No. prEN 17724:2023 E

Contents

Page

European foreword

This document (prEN 17724:2023) has been prepared by Technical Committee CEN/TC 455 “Plant biostimulants”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede CEN/TS 17724:2022.

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

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 and M/564 Amd1, 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.

This document, which defines terms relating to plant biostimulants used in other harmonized standards under Regulation (EU) 2019/1009, alone cannot provide a presumption of conformity to any of the requirements set out in the Regulation.

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 commercialization of the European biostimulant industry.

1 Scope

This document specifies the terms and definitions referred to in the plant biostimulant field and consists of 6 subclauses:

3.1 Claims

3.2 Terms relating to components

3.3 Terms relating to application method

3.4 Terms relating to sampling

3.5 Terms relating to physical form

3.6 Others terms relating to plant biostimulants

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 Claims

3.1.1 General principles

3.1.1.1
applicant R&D activities
data derived from R&D activities performed by the applicant

Note 1 to entry: R&D can be related to the plant biostimulant product development, testing and validation, irrespective of the environment in which the type of data has been generated (e.g. under controlled conditions, protected crop or field conditions).

Note 2 to entry: If the applicant has performed the R&D activities by its own technical resources or if the applicant has subcontracted the R&D activities, as long as the owner of the outcome data from the R&D activities is and can be proven to be the applicant.

3.1.1.2
bioavailability
degree to which substances can be absorbed/adsorbed by a plant or microbe, which is made available at a site of physiological activity and so is able to have a biological effect

3.1.1.3
claim
effect(s) of the product that could be asserted on the product label of a plant biostimulant and after the conformity assessment procedure

3.1.1.4
crop
cultivated plant including all components of the plant (above ground parts and below ground parts), mushrooms, microalgae and macroalgae

3.1.1.5
general principle
define the crops and quality criteria applicable to all plant biostimulants for carrying out the tests necessary to justify the claim

3.1.1.6
plant
live plant and live parts of plants, including fresh fruit, vegetables and seeds

Note 1 to entry: It also includes microalgae, macroalgae and mushrooms.

3.1.1.7
plant biostimulant
product stimulating plant nutrition processes independently of the product's nutrient content with the sole aim of improving one or more of the following characteristics of the plant or the plant rhizosphere:

- nutrient use efficiency,
- tolerance to abiotic stress,
- quality traits,
- availability of confined nutrient in soil or rhizosphere

3.1.1.8
controlled conditions trial
trial carried out in a specific place like glasshouse, climatic chamber, etc., where part of the environmental parameters can be controlled or can be measured (like soil, temperature, light, humidity, etc.)

3.1.1.9
protected crop
crop cultivation in greenhouses or plastic tunnels with or without specific control of climate conditions according to the farming practice

EXAMPLE Cucumbers/tomatoes cultivation.

3.1.1.10
plant nutrient
chemical element used by the plant for growth and development, usually classified as a primary macronutrient, a secondary macronutrient or a micronutrient per the quantities required by the plant

Note 1 to entry: Primary macronutrients – nitrogen (N), phosphorus (P), potassium (K),

Secondary macronutrients – calcium (Ca), magnesium (Mg), sodium (Na), sulphur (S),

Micronutrients – boron (B), cobalt (Co), copper (Cu), iron (Fe), manganese (Mn), molybdenum (Mo), zinc (Zn).

3.1.1.11
trial series
grouping of a number of independent field trials (e.g strip, randomized complete block designs), including protected crops carried out with plants, which have the same objectives, experimental design, protocol, parameters to prove the consistency of a result

Note 1 to entry: It can be conducted in different locations and /or over a number of consecutive years, as long as it satisfies quality criteria described in EN 17700-1:—[1], *General principles* (same protocol, same crop, control, timing).

3.1.1.12
strip trial
trial carried out using two strips, next to each other, in the same field, to compare control with plant biostimulant treatment without repetition

3.1.1.13
replicates
repetition of each treatment in the same trial, at the same time and under the same agronomic management practices (application of fertilizers, plant protection products) as all other treatments

3.1.1.14
agronomic marker
measurable plant trait used to validate the claim

3.1.1.15
stress marker
physiological, biochemical and molecular traits associated with a plant response to a specific stress

Note 1 to entry: the stress marker can be divided in three specific traits:

- Biochemical traits (antioxidants, lipid peroxidation, reduction in Reactive Oxygen Species (ROS), reduction in free radicals),
- Molecular traits (Genes, transcription factors, metabolic pathways related to abiotic stress),
- Physiological traits: electrolyte leakage, relative water content, reduced stress symptoms.

EXAMPLE Heat shock proteins, electrolyte leakage for thermal stress, Chlorophyll fluorescence, lipid peroxidation for light stress, Electrolyte leakage, lipid peroxidation for mechanical stress, Relative water content, electrolyte leakage for water stress

3.1.2
Nutrient Use Efficiency
measure of a plant's ability to acquire and utilize nutrients from the environment for a desired outcome based on (a) nutrient availability (b) uptake efficiency and/or (c) utilization efficiency

Note 1 to entry: Nutrient use efficiency is a complex trait: it depends on the ability to take up the nutrients from the soil, medium, fertilizing products, but also on transport, storage, mobilization, within the plant.

[1] Under preparation

3.1.2.1
chelated plant nutrient
complexed plant nutrient
composition based on an inorganic form of the plant nutrient and a chelating or complexing agent, resulting in a product that enhances the nutrient availability to plants

EXAMPLE A composition of chelated or complexed plant nutrient is a salt or oxide.

3.1.2.2
nutrient assimilation
uptake of nutrients into cells and tissues and consequent building up into more complex substances

EXAMPLE Converting available nitrogen into biomass.

3.1.2.3
nutrient availability
measure of the capacity of a nutrient to be acquired by the plant, depending on its presence in the soil solution or exchangeable on soil colloids

3.1.2.4
nutrient available
elements either present in the soil solution or exchangeable on soil colloids

3.1.2.5
nutrient uptake
acquisition of nutrients by the plant

3.1.2.6
plant development
complex process by which the size, composition and organization of a plant changes during its life, encompassing seed germination, vegetative growth, formation of flowers, bloom, fruit set and maturation (embryo development)

3.1.2.7
plant metabolism
various biochemical reactions occurring in a living plant cell in order to maintain life and growth

3.1.2.8
plant nutrition
supply and absorption of chemical compounds needed for plant growth and metabolism

3.1.2.9
plant nutrition process
mechanism by which nutrients are utilized or converted to cellular constituents and used for energetic or metabolic purposes

3.1.2.10
quality
desired attributes of cultivated organisms in terms of human or animal nutrition, marketing, aesthetics, composition, agronomical trait, or technical

3.1.2.11
substance
chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additives necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which can be separated without affecting the stability of the substance or changing its composition

3.1.2.12
uptake efficiency
measure of the plant capacity to acquire nutrients from the environment

3.1.2.13
utilization efficiency
measure of the plant capacity to transform and valorise acquired nutrients into more complex substances (e.g. organic compounds, plant biomass)

EXAMPLE Organic compounds, plant biomass.

3.1.3
tolerance to abiotic stress
ability to endure abiotic stress

3.1.3.1
abiotic stress
negative impact of non-living factors on the plant in a specific crop environment

Note 1 to entry: Crop tolerance to abiotic stress is addressed to one or more (multiple or combined) of the following stress categories:

1) thermal stress;

2) light stress;

3) mechanical stress;

4) water stress;

5) chemical stress.

3.1.3.1.1
chemical stress
negative impact of chemicals (supra-optimal or sub-optimal chemical compounds or presence) on the plant in a specific crop environment

EXAMPLE Salt stress, mineral toxicity induced by heavy metals or excessive application of mineral nutrients, adverse pH conditions, ozone stress, phytotoxic effects of xenobiotics.

3.1.3.1.1.1
osmotic stress
physiologic dysfunction caused by a sudden change in the solute concentration around a cell, which causes a rapid change in the movement of water across its cell membrane