



**SLOVENSKI STANDARD**  
**kSIST-TS FprCEN/TS 17724:2021**  
**01-november-2021**

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**Rastlinski biostimulansi - Terminologija**

Plant Biostimulants - Terminology

Biostimulanzien für die pflanzliche Anwendung - Terminologie

Biostimulants des végétaux - Terminologie

**Ta slovenski standard je istoveten z: FprCEN/TS 17724**

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**ICS:**

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

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TECHNICAL SPECIFICATION  
SPÉCIFICATION TECHNIQUE  
TECHNISCHE SPEZIFIKATION

**FINAL DRAFT**  
**FprCEN/TS 17724**

September 2021

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ICS 65.080

English Version

## Plant Biostimulants - Terminology

Biostimulants des végétaux - Terminologie

Biostimulanzien für die pflanzliche Anwendung -  
Terminologie

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

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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 Technical Specification. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Technical Specification.

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

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

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## European foreword

This document (FprCEN/TS 17724:2021) has been prepared by Technical Committee CEN/TC 455 “Plant biostimulant”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Vote on TS.

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

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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 fertilising products ("FPR" or "Fertilising Products Regulation"). This request, presented as SReq M/564, also contributes to the Communication on "Innovating for Sustainable Growth: A Bio economy for Europe". The Working Group 5 "Labelling and denominations", 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 commercialization of the European biostimulant industry.

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## 1 Scope

This document specifies the terms and definitions referred to all the plant biostimulant field and it is constituted by 6 subclauses:

- 3.1 Claims
- 3.2 Terms relating to components
- 3.3 Terms relating to application method
- 3.4 Terms relating to sample preparation
- 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

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#### 3.1.1 General principles

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##### 3.1.1.1

##### applicant R&D activities

data derived from R&D activities performed by the applicant

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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

**FprCEN/TS 17724:2021 (E)****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 micro algae, macro algae and mushrooms.

**3.1.1.7****plant biostimulant product**

product stimulating plant nutrition processes independently of the product's nutrient content with the sole aim of improving the nutrient use efficiency, the tolerance to abiotic stress, the quality traits of the plant or the plant rhizosphere or the availability of confined nutrient in soil or rhizosphere

**3.1.1.8****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.

**3.1.1.9****plant nutrient**

chemical element used by the plant for growth and development, usually classified as Primary Macronutrients, Secondary Macronutrients and Micronutrients in the quantities required by the plant

Note 1 to entry: Carbon, hydrogen, and oxygen are also essential elements for plant growth.

Note 2 to entry: Primary Macronutrients – Nitrogen, Phosphorus, Potassium;

Secondary Macronutrients – Sulphur, Calcium, Magnesium, Sodium;

Micronutrients – Iron, Molybdenum, Boron, Copper, Manganese, Zinc, Cobalt.

**3.1.1.10****trial series**

combination of more than one trial result, all trials performed under the same trial protocol but in different places and/or at different times

EXAMPLE Rate, crop, number of applications.

**3.1.2****Nutrient Use Efficiency****NUE**

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, usage within the plant.



**3.1.2.1****chelated plant nutrient  
complexed plant nutrient**

composition based on an inorganic form of the plant nutrient (for ex. salt or oxide) and a chelating or complexing agent, resulting in a product that enhances the nutrient availability to plants

**3.1.2.2****labelling**

improve nutrient(s) use efficiency (the nutrient in question must be precisely specified) according the type of the product biostimulant's activities and the type of plant nutrients

**3.1.2.3****nutrient assimilation**

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

EXAMPLE      converting available nitrogen into biomass.

**3.1.2.4****nutrient availability**

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

**FprCEN/TS 17724:2021 (E)****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 may 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 valorize acquired nutrients into more complex substances

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

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

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- 1) chemical stress;
- 2) light stress;
- 3) mechanical stress;
- 4) osmotic stress;
- 5) oxidative stress;
- 6) thermal stress;
- 7) water 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, high solutes concentrations, mineral toxicity induced by heavy metals or excessive application of mineral nutrients, adverse pH conditions, ozone stress, phytotoxic effects of xenobiotics.

**3.1.3.1.2****light stress**

negative impact of light intensity and/or spectrum on the plant in a specific crop environment

EXAMPLE High irradiance or low irradiance, UV radiation.

**3.1.3.1.3****mechanical stress**

negative impact of a mechanical force on the plant or the root zone in a specific crop environment

EXAMPLE Wind, hail, agricultural operations.

**3.1.3.1.4****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

**3.1.3.1.5****oxidative stress**

disturbance in the normal redox state of cells that can cause toxic effects through the production of peroxidase and free radicals that damage all components of the cells, including proteins, lipids and DNA

**3.1.3.1.6****thermal stress**

negative impact of temperature (supra-optimal and sub-optimal temperature) on the plant in a specific crop environment

EXAMPLE Heat stress or cold stress such as chilling and freezing stress environment.

**3.1.3.1.7****water stress**

negative impact of water or high solutes concentration (supra-optimal and sub-optimal temperature with the water level) or excessive transpiration on the plant in a specific crop environment

EXAMPLE Drought, High vapour pressure deficit, flooding.

**3.1.3.2****priming effect**

biochemical signalling induced by a first stress exposure that leads to enhanced defence system to a later stress

Note 1 to entry: Priming effect results in a faster and stronger induction of basal defence mechanisms to abiotic stresses. Biostimulants can act as a priming stimulus. Some priming effects have been shown to pass down plant generations allowing a local population to improve fitness to the immediate environment.

**3.1.3.3****xenobiotic**

chemical substance found within an organism that is not naturally produced or expected to be present within the organism

Note 1 to entry: Heavy metals, pesticides, ozone.

**3.1.4****quality trait**

desired attribute(s) of a crop regarding agronomical and marketable traits

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