

English Version

Plant biostimulants - Claims - Part 2: Nutrient use efficiency resulting from the use of a plant biostimulant

Biostimulants des végétaux - Allégations - Partie 2 :
Efficacité d'utilisation des éléments nutritifs résultant
de l'utilisation d'un biostimulant des végétaux

Pflanzen-Biostimulanzien - Angaben - Teil 2: Effizienz
der Nährstoffverwertung infolge der Verwendung
eines Biostimulans für die pflanzliche Anwendung

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European foreword

This document (CEN/TS 17700-2:2022) 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.

The CEN/TS 17700 series, *Plant biostimulants — Claims*, consists of the following parts:

- *Part 1: General Principles;*
- *Part 2: Nutrient use efficiency resulting from the use of a plant biostimulant;*
- *Part 3: Tolerance to abiotic stress resulting from the use of a plant biostimulant;*
- *Part 4: Determination of quality traits resulting from the use of a plant biostimulant;*
- *Part 5: Determination of availability of confined nutrient in the soil or rhizosphere.*

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Introduction

This document has been developed to provide guidance for a consistent approach to justify the claims associated with the use of plant biostimulants in agriculture.

The definition of plant biostimulants to be used in the regulation on fertilizing materials is claims-based. For this reason, demonstrating that a product is indeed a *bona fide* plant biostimulant depends on a demonstration of its effect.

The placing of a plant biostimulant on the market should never be considered to guarantee effectiveness under all conditions, as many factors may influence the performance of a biostimulant in the field.

Plant biostimulants used in agriculture can be applied in multiple ways: on soil, on plant, as seed treatment, etc. This document is applicable to all application types of plant biostimulants in agriculture.

1 Scope

This document provides guidance for justifying agronomic nutrient use efficiency claims of plant biostimulants used in agriculture.

This document is aimed primarily at manufacturers, laboratories, researchers, technical centres, companies that will put the products on the market, notifying authorities, notified bodies, and market surveillance authorities.

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 17700-1:2022, *Plant biostimulants — Claims — Part 1: General Principles*

CEN/TS 17724:2022, *Plant biostimulants — Terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TS 17724:2022, CEN/TS 17701-1:2022 and the following apply.

3.1

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, fertilizers... but also on transport, storage, mobilization, usage within the plant.

3.2

nutrient availability

elements either present in the soil solution or exchangeable on soil colloids

3.3

uptake efficiency

measure of the plant capacity to acquire nutrients from the environment

3.4

utilization efficiency

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

3.5

plant nutrient

chemical element used by the plant for growth and development usually classified as a Primary Macronutrient, Secondary Macronutrient or Micronutrient per the quantity 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 – Calcium (Ca), Magnesium (Mg), Sodium (Na), Sulphur (S)