



SLOVENSKI STANDARD
kSIST-TS FprCEN/TS 17700-1:2021
01-november-2021

[Not translated]

Plant biostimulants - Claims - Part 1: General principles

Biostimulanzien für die pflanzliche Anwendung - Angaben - Teil 1: Allgemeine Grundsätze

Biostimulants des végétaux - Allégations - Partie 1 : Principes généraux

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Ta slovenski standard je istoveten z: FprCEN/TS 17700-1

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ICS:

65.080

Gnojila

Fertilizers

kSIST-TS FprCEN/TS 17700-1:2021

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English Version

Plant biostimulants - Claims - Part 1: General principles

Biostimulants des végétaux - Allégations - Partie 1 :
Principes généraux

Biostimulanzien für die pflanzliche Anwendung -
Angaben - Teil 1: Allgemeine Grundsätze

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

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| Contents | Page |
|--|-------------|
| European foreword..... | 3 |
| Introduction | 4 |
| 1 Scope..... | 5 |
| 2 Normative references..... | 5 |
| 3 Terms and definitions | 5 |
| 4 Type of information that can be used to demonstrate efficacy of a claim..... | 6 |
| 4.1 Field and/or protected crop experimental data..... | 6 |
| 4.2 Under controlled conditions (e.g.: laboratory data, greenhouse, growth chamber...) | 6 |
| 4.3 Literature review | 6 |
| 5 General guideline for trials/assays of plant biostimulants | 7 |
| 5.1 General..... | 7 |
| 5.2 Crop groupings for the performance of plant biostimulant trials..... | 7 |
| 5.3 Minimum number of trials to be provided | 10 |
| 5.4 Trial design and statistical analysis | 11 |
| 6 Terminology of crops on the label | 13 |
| 7 Quality Criteria..... | 13 |
| 7.1 General..... | 13 |
| 7.2 Criteria for type of organization in charge of trial..... | 14 |
| 7.3 Modes of operation..... | 14 |
| 8 Information to be collected in individual trials..... | 15 |
| 8.1 Experimental conditions | 15 |
| 8.2 Application of the product..... | 16 |
| 8.3 Recording measurements | 16 |
| 8.4 Presentation of the Results..... | 16 |
| Annex A (informative) P-value choice and impact on the results quality | 17 |
| Bibliography..... | 18 |

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kSIST-TS FprCEN/TS 17700-1:2021
<https://standards.iteh.ai/catalog/standards/sist/8314c640-e42f-46b7-9989-d7a3c3e1b2f1/ksist-ts-fprcen-ts-17700-1-2021>

European foreword

This document (FprCEN/TS 17700-1:2021) 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 Vote on TS.

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 plant 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.

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1 Scope

This document specifies the general principles for justifying the product claims for plant biostimulants.

General principles consist of and define all general parameters, requirements and quality criteria, and are intended to be applied in order to assess the efficacy of trials used for claim(s) validation as a result of the use of a plant biostimulant.

This document is aimed primarily at manufacturers, laboratories, researchers, technical centres, companies that will put the products on 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 17700-5:—¹, *Plant biostimulants - Claims - Part 5: Determination of availability of confined nutrients in the soil or rhizosphere*

CEN/TS 17724:—², *Plant biostimulants - Terminology*

3 Terms and definitions

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

3.1

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

3.2

claim

effect(s) of the product that could be asserted on the product label of a plant Biostimulant after the conformity assessment procedure

¹ Under preparation. Current stage is: FprCEN/TS 17700-5:2021.

² Under preparation. Current stage is: FprCEN/TS 17724:2021.

FprCEN/TS 17700-1:2021 (E)**3.3****general principle**

rule defining the crops and quality criteria applicable to all plant Biostimulants for carrying out the tests necessary to justify the claim

3.4**crop**

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

3.5**plant nutrient**

chemical element used by the plant for growth and development, usually classified as a Primary Macronutrient, Secondary Macronutrient or Micronutrient in 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 (N), Phosphorus (P), Potassium (K),

Secondary Macronutrients – Sulphur (S), Calcium (Ca), Magnesium (Mg), Sodium (Na),

Micronutrients – Iron (Fe), Molybdenum (Mo), Boron (B), Copper (Cu), Manganese (Mn), Zinc (Zn), Cobalt (Co).

3.6**protected crop**

crop cultivation in greenhouses or plastic tunnels with or without specific control of climate conditions according to the farming practice (for example: cucumbers/ tomatoes cultivation)

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4 Type of information that can be used to demonstrate efficacy of a claim**4.1 Field and/or protected crop experimental data**

Field trials are essential to justify plant biostimulant claims. For some claims, however, the appropriate field conditions cannot always be easily reached (for example, salt stress or cold stress) in the field.

4.2 Under controlled conditions (e.g.: laboratory data, greenhouse, growth chamber...)

Plant Biostimulant claims can be proven (depending on the claim defined in the dedicated Technical Specification) by data generated under controlled conditions (e.g. greenhouses, growth room, growth chamber, laboratory data).

4.3 Literature review

Scientific literature can be used as given in Technical Specifications CEN/TS 17700-2:—³, CEN/TS 17700-3:—⁴, CEN/TS 17700-4:—⁵ and CEN/TS 17700-5:— to describe methods used to measure the effect of the product and analytical methodologies.

Only peer review literature (e.g. referenced by the Scopus/Web of science databases) shall be accepted.

³ Under preparation. Current stage is: FprCEN/TS 17700-2:2021.

⁴ Under preparation. Current stage is: FprCEN/TS 17700-3:2021.

⁵ Under preparation. Current stage is: FprCEN/TS 17700-4:2021.

5 General guideline for trials/assays of plant biostimulants

5.1 General

All experiments/trials shall be performed according to the Quality Criteria defined in this document.

5.2 Crop groupings for the performance of plant biostimulant trials

The crop groupings for conduction of plant biostimulant trials are defined in Table 1, except for the availability of confined nutrients in a soil claim. If the crop is not listed in Table 1, refer to the definition below to determine the appropriate crop group. Moreover, if the crop does not fit one of these definitions below, the “specific cultures” rules described in Table 2 will be followed.

- Broadacre crops (combinable and processing products): annual and non-annual crops usually characterized by being grown in large extensions, harvested via combiners or industrial harvesters, with the aim of obtaining vegetative organs, Roots, Tubers and/or seeds/grains,
- Woody perennials: non-annual crops with the ability to cover their stems with suberized cork,
- Vegetables, ornamental and AMP (Aromatic and Medicinal Plant) crops: annual and non-annual crops usually correlated with seasonality and not included in the broadacre and woody perennial crops.

Table 1 — Crop groupings

| Broadacre: Combinable and Processing Products | Woody Perennials | Vegetables, ornamental and AMP ^a crops |
|---|------------------|--|
| BARLEY | ALMOND | ANGELICA |
| BEAN | APPLE | ANISE |
| BEET | APRICOT | ASPARAGUS |
| BORAGE | AVOCADO | AUBERGINE |
| BUCKWHEAT | BAY | BALM |
| CHICKPEA | BILBERRY | BANANA |
| CLOVER | BLACK CURRANT | BASIL |
| COTTON | BLACKBERRY | BROCCOLI and CALABRESE |
| DURUM WHEAT | BLUEBERRY | BRUSSELS SPROUT |
| EVENING PRIMROSE | CAPERS | BULB ONION |
| GRASSLAND | CHERIMOYA | CABBAGE |
| HEMP | CHERRY | CARDOON |
| LENTIL | CHESTNUT | CARROT |
| LINSEED | CITRUS FRUITS | CAULIFLOWER |
| LUCERNE | COCOA TREE | CELERIAC |
| LUPIN | COFFEE TREE | CELERY |
| MAIZE | CRANBERRY | CELERY LEAVES (Caraway and Salad Burnet) |

FprCEN/TS 17700-1:2021 (E)

| Broadacre: Combinable and Processing Products | Woody Perennials | Vegetables, ornamental and AMP^a crops |
|--|-------------------------|---|
| MUSTARD (for seed) | CURRY LEAVES | CHERVIL |
| OAT | DATE | CHICORY (Witloof) |
| PEA | ELDERBERRY | CHILLI |
| POPPY | FIG | CHINESE CABBAGE |
| POTATO | GRAPE | CHIVES |
| QUINOA | GUAVA | CHOI SUM |
| RAPE | HAZENUT | COLLARD |
| RICE | HOPS | CORIANDER |
| RYE | JUNIPER | COURGETTE and SUMMER SQUASH |
| SAFFLOWER | KAFFIR LIME | CRESS |
| SAINFOIN | KIWI | CUCUMBER |
| SESAME | LIQUORICE | DILL |
| SORGHUM | LOGANBERRY | EDIBLE FLOWERS |
| SOYBEAN | MANGO | EDIBLE LEAF MUSTARD |
| SPELT | MEDLAR | ENDIVE |
| SUGAR BEET | MULBERRY | FENNEL |
| SUGARCANE | NECTARINE | FLOWERS and FILLERS |
| SUNFLOWER | OLIVE | GARLIC |
| SWEET POTATO | PAPAYA | GHERKIN |
| SWEETCORN | PASSION FRUIT | GLOBE ARTICHOKE |
| TOBACCO | PEACH | HORSERADISH |
| TRITICALE | PEAR | JERUSALEM ARTICHOKE |
| TURF | PERSIMMON | KALE and CAVOLO NERO |
| VETCH | PISTACHIO | KOHLRABI |
| WHEAT | PLUM | LAMB'S LETTUCE |
| | POMEGRANATE | LAND CRESS |
| | QUINCE | LEEK |
| | RASPBERRY | LETTUCE |
| | RED CURRANT | LOVAGE |
| | ROSEHIP | MAJORAM |
| | TEA TREE | MELON |
| | WALNUT | MINT |
| | | MUSHROOM |
| | | OREGANO |

| Broadacre: Combinable and Processing Products | Woody Perennials | Vegetables, ornamental and AMP ^a crops |
|---|------------------|--|
| | | OTHERS PMA |
| | | PARSLEY |
| | | PARSNIP |
| | | PEANUT |
| | | PEPPER |
| | | PINEAPPLE |
| | | PUMPKIN and WINTER SQUASH |
| | | PURSALNE |
| | | RADISH |
| | | RED BEET |
| | | RHUBARB |
| | | ROCKET |
| | | ROSEMARY |
| | | SAFFRON |
| | | SAGE |
| | | SALAD ONION |
| | | SALSIFY |
| | | SAVORY |
| | | SEA KALE |
| | | SHALLOT |
| | | SPINACH |
| | | STRAWBERRY |
| | | SWEDE |
| | | SWEET CICELY |
| | | SWISS CHARD (Spinach Beet) |
| | | TARRAGON |
| | | THYME |
| | | TOMATO |
| | | TURNIP |
| | | VANILLA |
| | | WATERCRESS |
| | | WATERMELON |

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^a Aromatic and Medicinal Plant