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Rules for agricultural seed testing - Part 10: Sowing quality - Vigor test

农作物种子检验规程 第10部分： 播种质量 活力测定

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 10 of GB/T 3543 "Inspection Procedure for Crop Seeds". GB/T 3543 has been published in the following parts.

- Part 1: General;

- Part 2: Sampling;

- Part 3: Seeding quality and purity analysis;

- Part 4: Seeding quality germination test;

- Part 5: Variety quality and purity identification;

- Part 6: Determination of moisture content of sowing mass;

- Other items inspection;

- Part 8: Determination of sowing quality and thousand-grain weight;

- Part 9: Determination of sowing quality and viability;

- Part 10.Determination of seeding quality and vitality;

- Part 11.Variety quality and authenticity identification;

- Part 12.Determination of variety quality of genetically modified seeds.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the Ministry of Agriculture and Rural Affairs of the People's Republic of China.

This document is under the jurisdiction of the National Technical Committee on Standardization of Crop Seeds (SAC/TC37).

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Introduction

Seed quality has many verifiable cultivation values, forming the currently recognized sowing quality, variety quality and health quality.

Among them, sowing quality mainly reflects the impact of seed appearance quality on seed sowing, and is divided into physical Quality and physiological quality. The most commonly used physical quality is cleanliness, dryness, fullness, uniformity and other characteristics, such as water Physiological quality mainly reflects the vitality of seeds, especially under suitable environmental control conditions.

The structural function and developmental capacity of seedlings under most conditions, that is, the ability to normally germinate and grow into plants under most conditions. The main indicators of physiological quality are germination Seed variety quality (varietal quality) is also called genetic quality (genetic quality), which mainly reflects The genetic background characteristics and genetic background consistency of crop seeds. At present, the indicators for measuring seed variety quality include variety authenticity The health quality mainly reflects the health status of seeds, whether there are any Pathogens, such as fungi, bacteria and viruses, and animal pests, including nematodes and insects, may also be involved in physiological conditions, such as trace element deficiencies.

GB/T 3543 "Inspection Procedures for Crop Seeds" is the basic standard for seed inspection methods, which consists of general principles, sampling, sowing quality, variety quality and It is composed of health quality and other parts, aiming to provide inspection basis for the quality requirements of the above three types of seeds, and is planned to be divided into the following 12 parts.

- Part 1: General. The purpose is to establish the general and overall requirements for each part of the inspection procedures for crop seeds and to govern the inspection procedures. Each part of the program.

- Part 2: Sampling. The purpose is to clarify the methods of sampling from seed batches, sub-sampling for testing and preservation of samples. program.

- Part 3: Seeding quality purity analysis. The purpose is to clarify the method for determining the net seed content in crop seed samples program.

- Part 4: Seeding quality germination test. The purpose is to clarify the test method and procedures for the germination of crop seed samples.

- Part 5: Variety quality and purity identification. The purpose is to determine the percentage of seeds of this variety in a seed sample. Methods and procedures.

- Part 6: Determination of moisture content in seeding mass. The purpose is to clarify the method and procedure for moisture content of crop seed samples.

- Part 7: Other items of inspection. The purpose is to clarify the method and procedures for seed sample health.

- Part 8: Determination of 1000-seed weight of sowing quality. The purpose is to clarify the method and procedure for determining the weight of 1000 seeds per seed sample.

- Part 9: Determination of sowing quality viability. The purpose is to clarify the method and procedure for determining the viability of seed samples.

- Part 10.Determination of seed quality vitality. The purpose is to clarify the method and procedure for determining the vitality of seed samples.

- Part 11.Variety quality and authenticity identification. The purpose is to clarify the identification methods and procedures for variety authenticity.

- Part 12.Determination of genetically modified seeds for variety quality. The purpose is to clarify the composition, genetic purity and gene authenticity of genetically modified seeds.

Procedure for determination of authenticity.

This document is the "vitality test" part of crop seed sowing quality. This document is based on international seed inspection procedures and adopts multiple methods and The vitality test reflects the difference in the performance of different seed batches with high germination rates in the field, that is, the degree of robustness.

This characteristic, unlike germination rate, is not a single measured characteristic, but describes the ability of a seed batch to germinate under unfavorable environmental conditions.

A comprehensive study of the rate and consistency of seed germination and seedling growth, seed emergence after storage, and especially the recovery of germination ability.

Concept. With the development of single seed sowing, seed vitality has become one of the main indicators of internal quality control in the seed industry.

Crop Seed Inspection Procedures Part 10.Determination of seeding quality and vigor

1 Scope

This document specifies the requirements for seed vigor determination content, determination procedures, result expression, etc.

This document applies to the inspection of crop seeds.

2 Normative references

GB/T 3543.1

GB/T 3543.2

GB/T 3543.3

GB/T 3543.4

GB/T 3543.6

3 Terms and definitions

The following terms and definitions apply to this document.

3.1.1 seedvigor

The general term for the various characteristics of a seed lot that determine the emergence performance and seedling performance of an acceptable germination rate under a wide range of environmental conditions.

Note. A high-vigor seed batch has the potential to grow into seedlings even under environmental conditions that are not suitable for the crop type.

3.1.2 Acceptable germination rate

In the absence of seed dormancy, the seed batch meets the standard requirements for the minimum germination rate of the crop variety.