ICS 65.020.01
CCS B 15

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 45211.3-2025

Technical code of practice for evaluation of resistance to diseases and insect pests in wheat - Part 3: Stem (black) rust

小麦抗病虫性评价技术规程 第3部分：秆锈病

Issued on: January 24, 2025 **Implemented on: August 1, 2025**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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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 3 of GB/T 45211 Technical Specification for Evaluation of Disease and Pest Resistance of Wheat. GB/T 45211 has been published as follows part.

- Part 1: Stripe rust;

- Part 2: Leaf rust;

- Part 3: Stem rust;

- Part 4: Fusarium fusarium;

- Part 5: Sheath blight;

- Part 6: Yellow dwarf disease;

- Part 7: Aphids;

- Part 8: Midges.

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 is proposed and coordinated by the Ministry of Agriculture and Rural Affairs

of the People's Republic of China.

This document was drafted by: Institute of Plant Protection, Chinese Academy of Agricultural Sciences.

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Introduction

GB/T 45211 "Technical Procedures for Evaluation of Wheat Disease and Insect Resistance" aims to standardize the technical methods, operating procedures and identification of wheat disease and insect resistance.

Evaluation principles provide standardized technical methods for breeding material screening, hybrid offspring selection, disease resistance gene discovery and variety evaluation and approval.

The method plays an important role in guiding and promoting disease-resistant breeding, variety layout and plant quarantine of wheat in China.

GB/T 45211 is divided into the following 8 parts.

- Part 1: Stripe rust;

- Part 2: Leaf rust;

- Part 3: Stem rust;

- Part 4: Fusarium fusarium;

- Part 5: Sheath blight;

- Part 6: Yellow dwarf disease;

- Part 7: Aphids;

- Part 8: Midges.

Technical regulations for evaluating wheat resistance to diseases and insect pests Part 3: Stem rust

1 Scope

This document defines the terms and definitions of wheat stem rust resistance evaluation technology, establishes the evaluation procedures, and specifies the preparation of inoculum, field resistance The contents include pathogen identification and seedling disease resistance identification, and the verification methods are described.

This document applies to the field and laboratory characterization and evaluation of

resistance to stem rust in Triticum aestivum.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 wheat stem rust; wheat black rust

Disease.

3.2 disease resistance

A heritable trait in plants that can reduce or overcome the pathogenic effects of pathogens.

3.3 Infection type

The classification is based on the severity of the necrosis reaction at the infection point, the size, shape and color of the lesions, and the degree of fruiting body development on the lesions.

Indicates the degree of resistance of wheat varieties to stem rust.

Note. It is recorded in six categories. 0, 1, 2, 3 and 4.Each category is added with a " " or "-" sign to indicate that it is heavier or lighter.

3.4 slowrusting

Under environmental conditions suitable for rust occurrence, the infection type is type 3 to type 4, but the disease development speed in the field is relatively slow, and the final disease index is Below 30 characteristics.

3.5 Pathogenicity

The ability of pathogens to interfere with host growth and cause disease.

3.6

The process of placing the inoculum into the diseased part of the plant through artificial manipulation and causing it to become diseased.