

ICS 65.020.01

CCS B 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 26628.4-2024

**Inspection of grain and oils-Standard atlas of stored grain
fungi-Part 4: Other common genera**

粮油检验 储粮真菌标准图谱 第4部分：其他常见菌属

Issued on: October 26, 2024

Implemented on: May 1, 2025

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

Table of Contents

Preface	III
Introduction	IV
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Inspection methods	4
5 Colony morphology and microscopic morphology of other common fungi in stored grain and their descriptions	4

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 4 of GB/T 26628 "Standard Atlas of Stored Grain Fungi for Inspection of Grain and Oils". Lower part.

- Part 1: Aspergillus;
- Part 2: Penicillium;
- Part 3: Fusarium;
- Part 4: Other common bacterial genera.

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 submitted by the State Administration of Grain and Material Reserves.

This document is under the jurisdiction of the National Technical Committee on Standardization of Cereals and Oils (SAC/TC270).

This document was drafted by: National Grain and Material Reserves Administration Scientific Research Institute, China Grain and Oils Reserves Corporation Chengdu Storage Research Institute Co., Ltd., China Grain and Oils Reserves Corporation Quality Management Co., Ltd.

Inspection Center Co., Ltd., Henan University of Technology.

The main drafters of this document are: Qi Zhihui, Tang Fang, Lei Yuqing, Chen Shuai, Tian

Lin, Zhang Haiyang, Lan Shengbin, Chen Liang, Feng Yongjian, Chen Jinying, Fan Yunqian.

Introduction

Fungi are one of the important biological factors that cause the deterioration of grain quality. In order to early evaluate and identify fungi and mycotoxins in grain To better understand the pollution hazards of grain storage and reduce the risk of grain quality and safety, it is necessary to study the types and distribution of fungi in grain.

The standard atlas of stored grain fungi, which was established based on the different morphological characteristics of different fungi species under different growth conditions, can be used to accurately identify the fungi.

This provides auxiliary reference for fungal testing in stored grain and improves the accuracy and reliability of fungal identification results.

GB/T 26628 "Standard Atlas of Stored Grain Fungi for Inspection of Grain and Oils" aims to specify the inspection requirements for different species of fungi in stored grains and give The standard atlas and characteristic descriptions of the main fungi in the species are planned to consist of four parts.

- Part 1: *Aspergillus* spp.
- Part 2: *Penicillium* spp.
- Part 3: *Fusarium* spp.
- Part 4: Other common bacterial genera.

Standard Atlas of Stored Grain Fungi for Grain and Oil Inspection Part 4: Other common bacterial genera

1 Scope

This document defines the terms and definitions of other common fungi in the Standard Atlas of Stored Grain Fungi, describes the test methods, and gives the See the colony morphology characteristic diagram and microscopic morphology characteristic diagram and characteristic description of the fungi of the genus *Pseudomonas*.

This document is used as an auxiliary reference for the detection of other common bacterial genera in stored grain.

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Trichothecium

Ascomycota, Sordariomycetes, Hypocreales, Mycoplasma Note 1. The main characteristics of Trichothecene are that the colonies on PDA medium are pink-orange or orange-red in color, thin in texture, and flocculent, felt-like, feathery or The conidiophores are woolly and sometimes powdery due to the large number of conidia produced. The conidiophores vary greatly among species within the genus.

Erect, septate, unbranched, some conidiophores are very long, unbranched or rarely with one or more branches, with each conidia produced Each conidia base contains part of the top of the conidiophore, and at the end there is a phialopsis 10μm to 65μm long.

Cells, transparent, smooth-walled bottles, conidia, obovate, oblong or cylindrical, conidia 0~1 separated, elliptical or ovate.

The spores are produced in a continuous basal formation, connected to each other by scars. The upper spore of the two cells is larger, and the lower cell base is clear.

It is obviously shrunk and thinned, with scars at the base or one side.

Note 2. Trichothecene fungi can produce trichothecenes (TS).

3.2 Alternaria

Ascomycota, Dothideomycetes, Pleosporales, Pleosporaceae A genus of Pleosporaceae.

Note 1. The main characteristics are that the colonies are initially colorless on PDA medium and then gradually turn into blue-brown to dark brown, with a flocculent or velvety texture. Sometimes due to the production of a large amount of Conidia appear powdery. Conidiophores are simple or branched, erect or curved, solitary or clustered. Spore-forming cells are born on conidiophores and their The top of the branch is black in different shades and has a spore, which produces spores in the form of bud holes on the inner wall.

After the conidia fall off, the spore scar is clearly visible, with dark edges and light centers; the conidia are ovate, Inverted rod-shaped, inverted pear-shaped or oval, with a distinct navel, dark brown, smooth surface, several transverse septa, and color of varying shades of brown or green or yellowish brown The conidia are of different colors, smooth or with warts and spines. The spore body usually tapers to the top, without a beak or with an extended beak. The size and shape of the conidia of the species in this genus vary greatly.

The spores are regular and usually have secondary sporulation characteristics, forming long or short, branched or unbranched spore chains.

Note 2. Some Alternaria fungi can produce a variety of cytotoxins, including tenuazonic acid (TeA), alternatoxin (Alternaria- Toxins (Altertoxins) I, II and III, etc.