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

GB/T 28084-2011

Detection and identification of *Verticillium dahliae* Kleb.

棉花黄萎病菌检疫检测与鉴定

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Quarantine;
Standardization Administration of the PRC**

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard by the National Standardization Technical Committee of Plant Quarantine (SAC/TC271) and focal points. The main drafters of this standard. WU Li-feng, Han Shiping, Ning Hong, Bai Xiaodong, Liu Hui Chi, Lisu Fang, Xiong Hongli, Zhang Lei. *Verticillium dahliae* detection and identification of quarantine

1 Scope

China's national method for the quarantine detection and identification of *Verticillium dahliae* Kleb., the cause of *Verticillium* wilt of cotton. It specifies the field identification of symptoms, the sampling, and the isolation, culture, detection and identification of the fungus, and it applies to the quarantine detection and identification of the organism in cotton plant tissue and in cotton seed. *Verticillium* wilt is the disease that limits where cotton can be grown, and the reason is the microsclerotium. When the fungus has finished with a plant it forms dense black bodies of thickened hyphal cells, and those bodies survive in soil for a decade or more without a host. A field that has carried an infected crop is infested effectively permanently: rotation does not clear it, fumigation is uneconomic at field scale, and the only durable answer is a resistant cultivar. So the disease is not managed after arrival - it is kept out, and where it cannot be kept out the cropping changes. That is what makes a quarantine method for cotton seed worth having, since seed is how the fungus moves between regions and countries. The detection problem is that the seed is symptomless and the fungus is present in a small proportion of it, sometimes internally and sometimes as microsclerotia adhering to the surface. The standard therefore covers three things in sequence: the field symptoms, so that a suspect crop is recognised where the material is inspected growing; the sampling and preparation of seed and plant tissue; and the isolation onto a selective medium, which suppresses the fast-growing saprophytes that would otherwise overgrow the plate before the pathogen appears. Issued on 30 December 2011 and in force since 1 June 2012.

This standard specifies the symptoms of *Verticillium* field identification, sampling, separating *Verticillium dahliae* (*Verticilliumdahliae*Kleb.) The Culture, detection and

identification methods. This standard applies to quarantine detection and identification of plant tissues and cotton verticillium wilt of cotton and cotton seeds.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB 15569 transporting agricultural plant quarantine rules

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Microsclerotia microsclerotium Verticillium fungus growth process by one or several separated mycelium enlargement, cell wall thickening, formed in all directions to budding meat Black eye visible mycelium particles.

3.2 Selective medium selectivemedium When plant pathogen isolation and culture, to promote the formation of colonies of the target, to inhibit the growth of other non-target organisms, added to the medium The different carbon sources, the medium having a nitrogen source or the ability to select certain inhibitory substances formed. Principle

4 Verticillium fungus mainly in the cotton plant, cotton seed, soil, disability organizations, manure, etc., after the infected cotton plants exhibited typical Type symptoms are an important basis for the field diagnosis; the use of selective media, target pathogens isolated from different contaminated materials, morphology Characterization. 5 instruments, appliances and reagents

5.1 equipment, appliances Scales, autoclaves, incubators, biological microscopes, pipettes, forceps, scalpels, vaccination rods, 9cm ~ 12cm petri dishes, beakers, Slides, cover slips, straw, clean benches and the like.

5.2 Reagents Unless otherwise indicated, the use of only standard analytical reagent.