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

GB/T 28072-2011

Detection and identification of *Alternaria gaisen* K. Nagano

梨黑斑病菌检疫鉴定方法

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Quarantine;
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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. This standard was drafted. China Inspection and Quarantine Science Research Institute, People's Republic of China Hebei Exit Inspection and Quarantine. The main drafters of this standard. Yan Jin, Song Fu, Zhao Wensheng Wu Shan goods, Wang Zhaohua, Chen Ke, Huang Ying, Chen Yan, Zhang Qiue. Pears quarantine and identification of Alternaria

1 Scope

China's national method for the quarantine detection and identification of Alternaria gaisen K. Nagano, the fungus that causes black spot of pear. It establishes the detection and identification methods, and it applies to pear propagation material from countries and regions where pear black spot occurs, and to the quarantine identification of suspect pear fruit, leaves and branches within the country. Alternaria gaisen is a host-specific pathotype, and that is what makes it dangerous. It produces a host-selective toxin to which Japanese pear cultivars are susceptible and others are not, so the fungus attacks the cultivars a modern pear orchard is planted with and ignores the wild material around it. On a susceptible cultivar it causes black spots on leaves, shoots and fruit, defoliation, and fruit that cannot be sold, and control requires repeated fungicide application through the season. Introducing it into a pear-growing region converts an orchard that needed little spraying into one that needs a programme. The detection problem is the one common to fungal pathogens on planting material: the fungus travels on and in symptomless tissue, it is one of a genus full of common saprophytic species that look similar, and identification to the level that matters - a pathotype within a species - cannot be done from a spore under a microscope alone. So the standard specifies the isolation and culture, the morphological examination of the colony and the conidia, and the pathogenicity confirmation on a

susceptible host, which is the step that distinguishes this pathotype from the harmless *Alternaria* that grows on everything. It also gives the basic information on the organism and its position in the mitosporic fungi. Issued on 30 December 2011 and in force since 1 June 2012.

This standard establishes pear *Alternaria* quarantine detection and identification methods. This standard applies to pears and pear fruit pear black spot occurs from countries and regions belong to quarantine reproductive material, as well as suspected domestic pear *Alternaria* fruit, quarantine and identification of leaves and branches.

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. SN/T 2122 entry and exit quarantine of plants and plant products sampled

3 Pears *Alternaria* basic information

Pear spots *Alternaria* (*Alternaria* gaisen K.Nagano) fungi industry Fungi, fungal spores mitosis Mitosporic fungi. Pear *Alternaria* additional information, see Appendix A.

4 Principle of the method

Identification of pear *Alternaria* according to host range of the fungus, transmission, plant symptoms (see Appendix B) caused by pathogenic form State (see Appendices C and D) and whether pear leaves pathogenic and other identification.

5 Key Equipment

5.1 Equipment Stereo microscope, biological microscope (with oil immersion and micrometer), the general balance (inductance 0.1g), clean benches, biological incubator, high pressure Sterilizer.

5.2 test device Hand-held magnifying glass, dish, flask (500mL), the tube (diameter 12mm), beaker (1000mL), scalpel, surgical scissors, tweezers Son, slides, cover slips, measuring pipette, alcohol lamp. Quarantine and identification of 6

6.1 quarantine site