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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 29582-2013

## Detection and identification of peanut stunt virus

花生矮化病毒检疫鉴定方法

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**Standardization Administration of the PRC**

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## Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by the National Commission for Standardization of Plant Quarantine Standardization (SAC/TC271). The drafting unit of this standard. Shanghai Entry-Exit Inspection and Quarantine Bureau of the People's Republic of China, Shenzhen Entry-Exit Inspection and Quarantine of the People's Republic of China Bureau of the People's Republic of China Xiamen Entry - Exit Inspection and Quarantine Bureau. The main drafters of this standard. Yu Cui, Yang Cuiyun, India Liping, Zheng Yun, Liao Furong, Zheng Jianzhong, Yi Jianping. Identification method of peanut dwarf virus

## 1 Scope

China's national method for the quarantine detection and identification of peanut stunt virus. It specifies the identification method for the virus and applies to its detection in living plant material, including vegetative propagation material, tissue culture plantlets, seeds and seedlings. Peanut stunt virus is a cucumovirus, related to cucumber mosaic virus, and its host range extends well beyond the crop it is named after: groundnut, soybean, bean, clover, alfalfa and a range of other legumes and weeds, several of which act as reservoirs without showing symptoms. In groundnut it causes stunting, leaf distortion and mottling, and a substantial yield loss; in forage legumes it shortens the productive life of a stand. It is transmitted by aphids in the non-persistent manner - the aphid acquires the virus in seconds of probing and transmits it within minutes, which means an insecticide programme cannot prevent spread because the insect infects the plant before the insecticide kills it. And it is seed-transmitted in several hosts. Those two routes together are why it is a quarantine subject: seed carries it across borders, and once it is present the aphids distribute it locally and no control measure stops them. The detection problem is the same as for the other seed-borne viruses: the material is symptomless, the transmission rate through seed is low, and the virus is present in a small proportion of a large consignment. So the standard specifies serological detection for screening, immunosorbent electron microscopy following

the entry-exit procedure for plant virus immune electron microscopy, and molecular confirmation, together with the sampling and the interpretation of results. Issued on 19 July 2013 and in force since 6 December 2013.

This standard specifies the method of identification of peanut dwarf virus. This standard applies to the detection of peanut dwarf virus in living plant materials, including asexual propagation material, tissue culture seedlings, seeds and seedlings.

## 2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document. SN/T 1840 Plant virus immunoelectron microscopy SN/T 2122 Quarantine sampling of inbound and outbound plants and plant products

## 3 Peanut dwarf virus basic information

Chinese name. peanut dwarf virus. English name. Peanutstuntvirus. Synonyms. groundnutstuntvirus; peanutstuntcucumovirus; robinia mosaicvirus; cloverblotch virus; peanutcommonmosaicvirus Abbreviations. PSV. Bromoviridae, Cucumber mosaic virus is Cucumovirus. See Appendix A for additional information on peanut dwarf virus.

## 4 Principle of the method

Using double antibody sandwich enzyme-linked immunosorbent assay based on antigen-antibody response (doubleantibodys and wichenzyme-linked immunosorbentassay, DAS-ELISA), reverse transcription and in vitro DNA synthesis techniques in reverse transcription polymerase chain reaction (reverse transcriptase polymerase chain reaction, RT-PCR).

## 5 Instruments, facilities, utensils and reagents

5.1 Instruments PCR instrument, clean bench, electronic balance (0.001g), electrophoresis, electrophoresis tank, gel imaging system, electron transmission microscope, water bath Pot, high-speed refrigerated centrifuge, -80 °C ultra-low temperature refrigerator, autoclave, ice maker, microwave oven, scroll oscillator.

5.2 facilities Isolated greenhouse (10 °C ~ 30 °C).

5.3 appliances (2 μL, 10 μL, 100 μL,.200 μL, 1000 μL, 5000 μL) and the corresponding RNase-free tip, no RNase centrifuge tube, PCR tube and mortar.