

ICS 65.020.01

CCS B 16



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

GB/T 23625-2009

**Guidelines for the quarantine surveillance of imported tulip
bulbs**

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Issued on: April 27, 2009

Implemented on: October 1, 2009

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

1 Scope
2 Normative references
3 Terms and Definitions
4 Monitoring pests
5 Monitoring equipment and supplies
6 Epidemic surveillance
7 Laboratory identification
8 Sample processing
9 Epidemic situation report
Appendix A
Appendix B
Appendix C

Foreword

Appendix A, Appendix B, and Appendix C of this standard are informative annexes. This standard is proposed and managed by the National Standardization Technical Committee on Plant Quarantine. This standard was drafted by: National Agricultural Technology Extension Service Center, Beijing Plant Protection Station, China Agricultural University, China Inspection and Quarantine Branch Research Institute. The main drafters of this standard. Wang Yuxi, Zheng Jianqiu, Li Zhihong, Zhao Jiwen, Ding Jianyun, Zhang Jianhua, Shao Gang. Tulip bulb surveillance protocol

1 Scope

China's national guidelines for the quarantine surveillance of imported tulip bulbs. It specifies the survey area and timing, the survey methods, the sampling, the identification and the recording and reporting for monitoring the pests and diseases of imported tulip bulbs. Bulbs are among the highest-risk commodities in plant quarantine, and tulip bulbs are imported in very large numbers from a small number of producing countries. The risk is structural rather than incidental. A bulb is a living plant organ carrying its own store of nutrients, shipped with soil residues on it and often with roots beginning; it is dormant, so an infection inside it shows no symptom at all at the time of inspection; and it is planted directly into field soil, where anything it carries is released into the ground rather than into a controlled environment. Several of the organisms that travel this way persist in soil for years

once introduced - the Fusarium and Rhizoctonia that cause bulb rots, the stem and bulb nematode, and the viruses that are the classic problem of the crop, since tulip breaking virus was known and prized for its effect on the flower centuries before anyone understood it was a disease. So surveillance of imported bulbs is not a border inspection alone: the standard covers the sampling of consignments, the examination of the bulbs including cutting and internal inspection, the growing-on of a sample to reveal what dormancy hides, the field survey of planted areas during the growing season, the identification of the organisms of concern, and the reporting that connects a finding back to a consignment and its origin. Issued on 27 April 2009 and in force since 1 October 2009.

This standard stipulates the procedures and methods for epidemic monitoring of tulip bulbs during planting. This standard applies to the monitoring of the outbreak of tulip bulbs imported from abroad.

2 Normative references

The clauses in the following documents have been adopted as references to this standard. All dated references, all subsequent The amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to reach an agreement according to this standard Can you use the latest version of these files? For undated references, the latest version is applicable to this standard. Glossary of phytosanitary terms ISPM5

3 Terms and Definitions

Glossary of phytosanitary terms Terms and definitions established in ISPM 5 apply to this standard.

4 Monitoring pests

"The People's Republic of China entry phytosanitary pests list" (Ministry of Agriculture announced on May 29,.2007), "National Plant Quarantine List of Sexual Harmful Diseases (Ministry of Agriculture, March 2,.2006 announcement) Quarantine pests associated with tulip bulbs, focusing on monitoring The quarantine pests proposed in the Quarantine Approval Form for Seeds and Seedlings.

5 Monitoring equipment and supplies

5.1 Insect monitoring Equipment and equipment. black light, yellow board, blue board, insect net, brush, finger tube, poison bottle, triangle paper bag, hand-held magnifying glass, microscope, dissecting mirror, Insect dissection needle and so on. Supplies. 95% ethanol, xylene, ethyl ether, distilled water, etc.

5.2 Nematode surveillance Equipment equipment. dissection mirror, optical microscope,

funnel, shallow sieve tray, mesh sieve (20 mesh, 400 mesh), test tube, petri dish, small mixer, concave glass Tablets, flat glass slides, glass wool, alcohol lamps, constant temperature water baths, electric plates, straws, tweezers, dryers, punchers, shovels, branches, machetes, polyethylene plastic Bags, oily pens, etc. Supplies. glycerin, 95% ethanol, distilled water, phenol, lactophenol, neutral gum, paraffin, silica gel, calcium chloride (CaCl_2), etc.

5.3 Disease Monitoring Equipment and equipment. microscope, slide, various test tubes and dishes, flasks, grinding vessels, microplate readers, pipettes, alcohol lamps, sterile Operating table, constant temperature moisturizing incubator, refrigerator, balance, scissors, spatula, paper bag or plastic bag, hand-held magnifying glass and so on. Supplies. 95% ethanol, distilled water, neutral gum, etc.

6 Epidemic surveillance

6.1 Monitoring period Tulip growing season.

6.2 Monitoring Methods According to the quarantine approval opinions, the requirements for isolation and trial planting shall be based on the key points designated by the plant quarantine agency and with isolation conditions. The biological characteristics of the monitored pests and the period of growth of the tulip were investigated 2 to 3 times during isolation, and attention was paid to maintaining The observation time interval of the rationale was found and the symptoms were sampled in a timely manner for laboratory testing; the requirements were set in the "Purposes of Quarantine Approval for Imported Seeds and Seedlings". The planting or unlimited planting conditions, or the tulip bulbs planted for production, are conducted once or twice in the tulip growing season. The symptoms are collected in time for laboratory testing. No obvious symptoms, equidistant point selection survey, 10 strains per point (area below 667m², selected 5 samples; 667m² to 2x667m², 10 samples selected; 2x667m² to 4x667m², 20 samples selected; 4x667m² or more selected 30 samples), fill in the "Outbreak Monitoring Questionnaire" (see Appendix A), find suspicious symptoms, and collect samples.

7 Laboratory identification

The suspicion of pest morphological observation, pathogenic bacteria isolation and culture, etc., was made on the suspected samples detected during the monitoring.

8 Sample processing

8.1 Insect pest samples Small insects, eggs, larvae, cockroaches are impregnated and preserved with 75% ethanol; butterflies and moth insects are stored in well-absorbed triangle paper; the body is longer Large insects store rolls of paper in rolls. Label well and keep it properly.

8.2 Disease samples Diseased and diseased tissue, the specimen is enclosed in a suitable glossy paper or plastic bag, and the label is affixed inside the envelope and outside the envelope, fungi and bacteria The specimens of sexual diseases were stored in fresh refrigerators at 4°C. Virus samples were placed in a low-temperature refrigerator at -20°C.

8.3 Nematode samples Diseased plants and diseased tissues are put into polyethylene plastic bags. If the samples cannot be separated in time, they can be stored in a room at 20°C to 25°C, and the bags can be opened. Breathable, and pay attention to moisturizing and avoiding sunlight.

8.4 Living samples The preservation time of live samples is not more than one month. After the end of the test, in addition to the specimens, the rest are inactivated.

9 Epidemic situation report

After completing the laboratory appraisal, fill in the "Plant Pests Sample Identification Report" (see Appendix B).

10 Epidemic Surveillance Report Record the monitoring results and fill out the Epidemic Surveillance Record Form. The plant quarantine agencies organize the monitoring results to form a "Plant Epidemic Surveillance "Report" (see Annex C), and report it step by step as required.

11 File Management Record and summarize the survey results in the monitoring area. The original records of the monitoring, together with other materials, are properly kept at the plant quarantine agency. If the collected samples have been identified as epidemic and have preservation value, they will be made into specimens, and the labels of the specimens will be filled in and kept in the quarantine institutions.

Appendix A

(Informative Appendix) Epidemic surveillance questionnaire Table A.

1 Epidemic surveillance questionnaire Monitoring plant monitoring units Monitoring location contact phone Name of pest occurrence note Symptom Description. Monitoring unit (seal). Monitoring person (signature). year month day

Appendix B

(Informative Appendix) Plant pest sample identification report Table B.

1 Plant Pests Sample Identification Report Numbering. Plant Name Variety Name Plant growth period Sample number Sampling site Sample Source Inspection Date Submitter Inspection unit contact phone number Detection and identification methods. Test and identification results. Remarks. Appraiser (signature). Reviewer (signed). Identification unit (seal). year month day