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Quarantine and identification method of Walnut beetle

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(English Translation)

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020.

This document was proposed and managed by the General Administration of Customs of the People's Republic of China.

Drafting organizations of this document. Foshan Customs of the People's Republic of China, Hangzhou Customs of the People's Republic of China, Erlianhao of the People's Republic of China Special Customs, Maoming Customs of the People's Republic of China, Guangzhou Customs of the People's Republic of China

1 Scope

This document stipulates the methods for the detection, specimen preservation and indoor identification of the walnut beetle.

This document is applicable to the quarantine and identification of walnut beetles in imported plants and plant products.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations Only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable Used in this document.

3 Terms and definitions

The following terms and definitions apply to this document.

Frons

The part that extends from the head between the compound eyes and reaches the upper mouthpiece.

Elytra bevel declivity the rear end of the elytra is sloped, and this slope is called the elytra slope.

Puncture

Protrusions on the body surface.

Engraved groove striae the elytra dorsal groove of bark beetle is usually composed of many dots. These rows of dots consist of longitudinally arranged grooves parallel to the wing slits, including the line of carved dots is called carved dot groove. There are 10 dot grooves on each wing surface of the elytra. Starting from the wing slit, there are the first groove and the second groove.

Interspace

The area between the grooves and grooves on the elytra of bark beetles. There are 11 grooves on each wing surface. The first groove starts from the wing gap.

Department, the second ditch, etc.

4 Basic information of Walnut beetle

Scientific name. *Pityophthorus juglandis* Blackman Chinese name. Walnut English name. Walnut Twig Beetle Taxonomic status. Coleoptera, Curculionidae, Scolytidae, Corthylini

Pityophthorina (Pityophthorina), Pityophthorus (Pityophthorus) is a world-wide species. There are currently 512 species recorded, of which Central America, 225 species in North America, 100 species in South America and surrounding islands, 15 species in Asia, 22 species in Europe, 22 species in Africa, 4 species have been recorded in my country, walnut the wood beetle harms plants in the Juglandaceae family (see Appendix A.2) and is distributed in the United States, Mexico, and Italy (see Appendix A.1).

Transmission method. The long-distance transmission of the worm is mainly by the transportation of host wood, and the short-distance transmission is mainly by the migration and spread of adults.

See Appendix A for other information on the walnut beetle.

5 Principles of the method

According to the hazard status of the walnut beetle, the larva, pupae or adult of the walnut beetle was found through inspection, and the larva or pupae need to be reared to adults, the species is judged according to the morphological characteristics of adults (see Appendix B).

6.1 Equipment

Labels, finger tubes, petri dishes, tweezers, biological incubators, scissors, insect needles, scalpels, gauze, brushes, handheld magnification Mirror, screwdriver, chisel, stereo microscope, tertiary board, thick paper.

6.2 Reagents

Soaking liquid (glacial acetic acid. formalin. 95% ethanol. distilled water = 4.6.15.30), 75% ethanol, absolute ethanol, glycerol.

7.1 Detection

Special attention should be paid to the inspection of the wood from the epidemic area. First, carefully observe whether there are wormholes and wormholes on the surface of the log. The toughness of the victim wood the bond between the bark and the sapwood is usually loose. Use a chisel or an ax to cut the bark and observe whether the phloem and the sapwood are harmful.

Hazard status (see Appendix C). There is a mother tunnel with sub-tunnels on both sides. The larvae continue to dig holes and feed in the sub-tunnel to make the whole hazard Shaped like a feather. The distribution of its various insect states in the wood is. eggs are arranged in sequence on both sides of the mother tunnel, larvae, pupae and newly emerging adults are usually at the end of the sub-tunnel, when checking for insects, it is necessary to break the tree to the end along with the extension of the tunnel to catch the

insects. And use a brush to gently Sweep away the moth powder to look for eggs.

For wooden boxes or pallets from the epidemic area, check the dunnage at the bottom of the wooden box, and focus on whether it has bark. If bark is found, snails can be used.

Cut off the cortex with a wire knife or chisel, and observe whether there are insects or insect passages on the joint surface of the phloem and the sapwood. If there is an insect passage, you can use a chisel to follow the tunnel.

Going excavation, various insect states can be found at the end of the tunnel. It should be recorded at any time, and the found insects should be sent to the laboratory for further identification.

Store the wood or wooden packaging that bore the beetles in a sealed container. Put the quarantine eggs, larvae, pupae or adults into ethanol-glycerin protection Store the liquid in a finger tube. If only live larvae are obtained on site, they can be directly brought back to the laboratory along with the damaged wood or wooden packaging, and record the interception.

Obtain the time, location, host, collector, etc., after artificial breeding and emergence into adults, then further identification.

7.2 Feeding

Bring the wood or wooden bag that is found to be damaged by larvae back to the laboratory, and put it in the insect cage to prevent the emergence of adult insects from escaping, at 24 °C ~ 26 °C Breed under temperature conditions, and then perform morphological identification after the emergence of adults.

8.1 Pin Insert Specimen

Adult specimens can be made as needle specimens. Cut thicker paper into small triangle or rectangular strips, stick the insect body on it, and puncture it with an insect needle Thick paper, and then insert it in the specimen box for storage. The label should be made of white hard paper, and the collection time, location, host and collection of the specimen should be recorded and other information.

8.2 Immersion specimen

Clean and tidy up the adults, larvae and other insect samples to be observed and identified. When there is dirt or powder on the body surface, use 75% ethanol or Soak in the prepared dipping solution. If molecular testing is required, it can be dipped in absolute ethanol and stored frozen.