ICS 65.020.01
CCS B 16

# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA



# GB/T 23619-2009

## Guidelines for the quarantine surveillance of Bactrocera dorsalis

柑桔小实蝇疫情监测规程

**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**

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## 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. National Agricultural Technology Extension Service Center, Plant Protection and Phytosanitary Station of Fujian Province. The main drafters of this standard. Wang Fuxiang, Yao Wenhui, Huang Zheng, Chen Jun, Huang Yueying, Xiang Yu, Xiong Hongli. Orange Bactrocera Outbreaks Monitoring Protocol

## 1 Scope

China's national guidelines for the quarantine surveillance of the oriental fruit fly, Bactrocera dorsalis. It specifies the survey area and timing, the survey methods, the trapping and sampling, the identification and the recording and reporting for monitoring this pest. The oriental fruit fly is among the most damaging horticultural pests in the world, and the reason is its range of hosts. It attacks several hundred kinds of fruit and vegetable - citrus, mango, guava, papaya, peach, banana, tomato - so there is almost always something for it to breed in, and a population once established has no seasonal gap in which to be starved out. The female lays beneath the skin of ripening fruit and the larvae develop inside it, which means the damage is invisible from outside until the fruit collapses, and it means infested fruit moves in trade without anyone noticing. That is why it is a quarantine pest almost everywhere and why an outbreak closes export markets immediately: a country that cannot

demonstrate freedom from it, or effective surveillance and control, loses access for every host commodity at once. Surveillance therefore has to be systematic rather than reactive. The standard specifies the trapping - methyl eugenol lures, which attract the male with great specificity and are the backbone of any fruit fly survey, together with protein bait traps that catch both sexes - the trap density and placement relative to hosts, the servicing interval, the timing through the season, the fruit sampling and incubation that confirms breeding rather than mere presence, the identification of a species that closely resembles its relatives, and the reporting that turns a catch into an official finding. Issued on 27 April 2009 and in force since 1 October 2009.

Products, monitoring methods, sample identification, epidemic determination, etc. This standard applies to the monitoring of the outbreak of citrus fruit fly.

## 2 Monitoring preparation

Collect information on the status of the local citrus fruit fly and its host status, and organize and analyze the monitoring plan.

## 3 Monitoring area

3.1 Occurrence area Emphasis will be placed on the monitoring of representative areas and border areas where outbreaks occur. Mainly monitor the occurrence and spread of the epidemic.

3.2 No area occurred Focus on monitoring high-risk areas, such as areas where epidemics have occurred, traffic along epidemic areas, and areas from epidemic areas. Distribution centers and major consumption areas for host plants and plant products and other regulated products, import and export centers for host plant products, and major consumer areas. The main monitoring is whether the citrus fruit fly is introduced.

## 4 Monitoring plants

Citrus, grapefruit, peach, carambola, mango, guava, persimmon, coriander, bayberry, bitter gourd, cucumber and other plants.

## 5 Monitoring period

From May to October each year, localities can adjust the climate conditions, the biological characteristics of citrus fruit fly and the growth of host crops. Specific monitoring time.

## 6 Monitoring supplies

6.1 Traps Recommended trap (see Appendix A for illustration). Container made of hard cylindrical plastic, with white translucent cylinder (160mm) and The black house cap

(55mm) consists of a lug on the top of the bottle. A 70mm long plastic support bar is attached to the inner side of the cap top end. Cardboard lures with square (30mm x 30mm) ends absorb attractants. Three circular trap holes (diameter) 10mm), facilitates fruit fly entry. Self-made trap. Use 500mL mineral water bottle cylindrical plastic tube as a trap, making method. drill two high 10mm in the middle of the bottle, A 20mm wide hole cuts the bottom of the bottle 50mm from the bottom of the bottle and is inserted into the bottle. The cotton sliver is grown to approximately 20mm in length. Cotton wick (the tampon should be tightened so that the attractant in the wick volatilizes more slowly and maintains a longer use time), and then the wick is installed in the trap The wire on the top of the device is hooked and the cotton core is changed every two months.

6.2 Attractants Methyl eugenol methyleugenol (abbreviated as Me).

6.3 Other supplies Dissecting microscope, magnifying glass, forceps, finger tube, insect needle, label paper, 75% ethanol, 40% formaldehyde, glacial acetic acid, absorbent cotton and so on.

### 7.1 Settings of the trap

7.1.1 No area occurred According to the host distribution of citrus fruit fly, select high-risk areas, determine 3 monitoring sites per county (city), and hunt 3 traps per monitoring site The traps are at least 50m apart.

7.1.2 Occurrence area In the center of the epidemic, each county (city) identified 5 monitoring sites, and each monitoring site hung five traps. The trap spacing was the same as 7.1.1.

7.2 Placement of traps When placing, try to choose the host plant as the trapping point of the trap, but do not cover it directly by the leaves or direct sun exposure. in case There are no nearby host plants that can be hung, they can also be hung on other non-host plants, and other scaffolds that hold the traps. Orchard prison The measuring point trap is suspended in the crown of the fruit tree; other monitoring points are generally suspended at a height of

1.5 m from the ground. Near the trap Place a wake up goal.

7.3 Daily Management and Maintenance of Traps The methyl eugenol lure was injected into the lure inside the trap, 2 mL each time, and supplemented once every 14 d to 21 d. During the entire monitoring period, each 7d Collect fruit fly specimens from the trap. Adults of the target fruit fly or suspected target fruit fly within the trap should all be collected, 75% Ethanol solution soaked preservation, affixed to specimen collection number.

8 sample identification

8.1 On-site diagnosis Diagnosis is based on the morphological characteristics of the adult and the symptoms of the crop, and relevant specimens are collected as needed. Hard to

diagnose on site Back to the laboratory for further identification.

8.2 Laboratory Identification Suspected fruit fly samples were found during the monitoring and brought back to the room for identification. Fill in the results of the laboratory test identification to the identification of plant pest samples Report (see Appendix B).

## 9 Outbreak determination

The occurrence of citrus fruit fly was observed during the monitoring. The extent and degree of occurrence were determined according to the monitoring situation and field investigation.

10 Monitoring Report Record the monitoring results and fill out the Epidemic Surveillance Record Form (see Appendix C). Phytosanitary organization organizes and aggregates monitoring results As a monitoring report, and reporting level by level as required.

11 Specimen preservation The collected adult was made into a needle-injected specimen or soaked specimen; the egg, larvae, and pupa were fixed solution (5 parts of 40% formaldehyde, 15 parts of 75% ethanol, 1 piece of glacial acetic acid is mixed) to save, put on the plug and sealed with wax, fill in the label of the specimen and keep it together with the specimen. 12 record keeping 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.



## Appendix A

(Informative Appendix) Orange fruitfly trap trap Figure A.

## Appendix B

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

1 Plant Pests Sample Identification Report 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 stamp. year month day

Note. This unitary triplicate consists of one inspection unit, one inspection unit and one quarantine agency.

## Appendix C

(Informative Appendix) Epidemic monitoring record Table C.

1 Epidemic surveillance record form Monitoring object monitoring unit Monitoring location