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

GB/T 13917.1-2026

Replacing GB/T 13917.1-2009

**Laboratory efficacy test methods and criteria for public health
insecticides for pesticide registration - Part 1: Spray
formulations**

农药登记用卫生杀虫剂室内药效试验及评价 第1部分：喷射用制剂

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 1 of GB/T 13917 "Indoor Efficacy Testing and Evaluation of Sanitary Insecticides for Pesticide Registration". GB/T 13917 The following sections have been released.

1. Spraying formulations;

4. Mosquito Coils;

5. Electric Mosquito Repellent Mats;

6. Electric Mosquito Repellent Liquid;

8. Powders and Pencils;

10. Simulated Scene This document replaces GB/T 13917.1-2009 "Indoor Efficacy Testing and Evaluation of Sanitary Insecticides for Pesticide Registration - Part

1. Spraying" Compared with GB/T 13917.1-2009, the main technical changes in the "Agent" are as follows, except for structural adjustments and editorial modifications.

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 2009 edition);

b) Added terms and definitions for "spray formulations", "sensitive strains", "knockout time", and "mortality rate" (see Chapter 3);

- c) The requirements for test materials have been changed (see 4.1, 4.2, and 2.1~2.5 of the 2009 edition);
- d) Bedbugs were added as a test material (see 4.2.6);

1 Scope

GB/T 13917.1-2026 is the Chinese national standard covering the laboratory efficacy test for an insecticide spray. The registration of any household insecticide in China rests on these laboratory efficacy tests: the test insects and their rearing, the chamber and the application, the knockdown and mortality observed and the criteria a product has to meet. It replaces GB/T 13917.1-2009 and has been in force since 1 November 2026, one of the parts of the GB/T 13917 series revised together. It was issued on 30 April 2026 and takes effect on 1 November 2026, replacing GB/T 13917.1-2009. The document is under the responsibility of the Ministry of Agriculture and Rural Affairs. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

0.4 mm, the nozzle diameter is

1.2 mm, and the tail end is connected to a flat-headed hose approximately 20 mm long. Connected to a No. 12 injection needle.

5.2 Cylindrical Device The cylindrical device is shown in Figure 2. A colorless and transparent cylinder (C) is mounted on a support (I), with a colorless and transparent acrylic glass disc at the top and bottom of the cylinder. Plates (E, F). The upper circular plate has a central hole, which is plugged with a rubber stopper (G). The lower circular plate has a central hole, which is plugged with a rubber stopper (H). The cylinder connects to the upper and lower plates... The joint between the lower circular plates is sealed with a sealing groove or rubber gaskets (D1, D2).

5.3 Air Compressor The pressure can be stably maintained at 9.8×10^4 Pa.

5.4 Agent contact plate surface There are three types of surfaces. non-absorbing, semi-absorbing, and absorbing. Non-absorbing surfaces are represented by smooth silicate glass surfaces; semi-absorbing surfaces... The surface of wood is represented by varnish (alkyd resin, acrylic resin, polyester resin); the absorbent surface is represented by cement surface (with slurry, tested for cockroaches, fleas, ants). Ants, bedbugs) or chalk (white, for testing mosquitoes, flies, fleas, ants, bedbugs) are used as representatives. Contact surface specifications. length greater than or equal to 200mm, width 200mm or greater.

5.5 Forced Contactor The forced contactor is shown in Figure

3. It is a colorless, transparent cuboid (A) with a circular hole in the center of its top cover. A

pull rod (B) is inserted into the hole, and the bottom of the pull rod is connected to The baffle (C) is adhered to the surface, and a pull plate (D) is located at the bottom of the cuboid, embedded in two grooves (E) at the bottom of the long side of the cuboid. One end (F) of the pull plate has... A long rectangular prism. The center of the front face (G) has an insect-releasing hole (H), outside which is an insect-releasing baffle (I). Above the baffle protrudes (J), secured with screws. The silk (K) is fixed above the insect release hole. The bottom of the back side of the cuboid, opposite the front face (G), has an inward protrusion (L). When the pull plate (D) is pulled out, the push plate... (C) When you reach the bottom, there is a space 7mm high under the baffle.

5.6 Bottomless Transparent Cylinder Inner diameter 80mm, height.200mm.

5.7 Bottomed transparent cylinder Inner diameter 80mm, height.200mm.

5.8 Mosquito suction tube or mosquito suction device Mosquito suction tube. inner diameter 5cm, length 15cm~20cm, one end is an embedded 1cm diameter flared mouth, and the other end is a wide mouth connecting the suction tube. Mosquito suction device. handheld, airflow $3\text{m}^3/\text{min}$ ~ $5\text{m}^3/\text{min}$. 5.9-second stopwatch Accuracy $\pm 0.5\text{s}$.

5.10 Counter Error 1000 ± 1 .

4 Test materials

4.1 Test reagents Set the dosage of the test reagent according to the experimental requirements. Specify the Chinese/English common name or code of the reagent, dosage form, active ingredient content, and production details. Company, production date or batch number, etc.

4.2 Test Target

4.2.1 Mosquitoes *Culex pipiens pallens* (northern region) or *Culex pipiens quinquefasciatus* (southern region) (Region), sensitive strains of test insects were reared according to the method in NY/T 1964.2, and selected from the 3rd to 5th day after emergence, with a body weight of (2.0 ± 0.2) mg. Unfed female adult worms.

4.2.2 Flies Houseflies (*Musca domestica*) were reared according to the method in NY/T 1964.1 for sensitive strains, and samples were selected on the 3rd day after emergence. On day 4, the adult insects weighed (20.0 ± 2.0) mg/female and (16.0 ± 1.6) mg/male, with half being female and half being male.

4.2.3 Cockroaches German cockroaches (*Blattella germanica*) were reared according to the method in NY/T 1964.4, and 10-day-old test insects were selected. Adult insects aged 20 days, weighing (100.0 ± 10.0) mg/female (non-podded) and (50.0 ± 5.0) mg/male, with half females and half males.

4.2.4 Ants The Yellow House Ant (*Monomorium pharaonis*), worker ants raised in the

laboratory.

4.2.5 Fleas *Xenopsyllacheopsis* or *Ctenocephalides felis*, laboratory-bred fleas aged 3 to 10 days. Blood-sucking adult worms.

4.2.6 Bed bugs Temperate bed bug (*Cimex lectularius*), adult bed bugs raised in the laboratory, 3 to 5 days after feeding on blood.

5 Instruments and Equipment

5.1 Sprayer Head The nozzle is shown in Figure

6 Test Methods

6.1 Test Conditions Temperature. $(26 \pm 2)^{\circ}\text{C}$. Relative humidity. $(60 \pm 10)\%$.

6.2 Judgment Criteria Knockdown. All six legs roll upwards or sideways and cannot crawl. Death. The insect does not react when lightly touched with a sharp instrument.

6.3 Spray Test

6.3.1 Mosquitoes and flies A cylindrical apparatus (5.2) was used. The test insects (30 houseflies or 30 mosquitoes) were placed into the sealed cylinder through the central hole of the circular plate (E). Inside, tightly seal the rubber stopper (G). Prepare the test solution according to the recommended dosage of the test agent and the spraying volume specified in Table 1, and wait for the test insects to recover. After normal operation, transfer the test solution to the small guide tube using a micropipette or pipette. Vertically embed the nozzle (5.1) into the cylindrical device base. Secure the nozzle to the central hole of plate (F). Close the nozzle's air valve and connect it to the air compressor. Start the air compressor and... Adjust the pressure reducing valve to (9.8×10^4) Pa, and insert the flat-tipped No. 12 injection needle (D) under the nozzle into the bottom of the small tubing containing the test solution. Open the air valve and spray the pesticide. After spraying, tighten the rubber stopper (H), start timing immediately, and record the number of insects knocked down at regular intervals. After 20 minutes, the knocked-down test insects were collected into a clean rearing cage and restored to standard feeding conditions, fed with cotton balls containing 5% sugar water. Dead test insects were checked after 24 hours. Insect count. Insects not knocked down within 20 minutes should not be collected but counted as live insects. The test should be repeated three or more times. After the test, the insects should be cleaned. The entire experimental setup.

6.3.2 Cockroaches, ants, fleas, bedbugs A cylindrical device (5.2) was used, with a strip of Vaseline applied to the inner wall 30 mm from the bottom. Twenty cockroaches were released into 5.2; or ants... Fifty ants were released into a dish with a 90mm diameter plate containing a