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

GB/T 13917.5-2026

Replacing GB/T 13917.5-2009

**Laboratory efficacy test methods and criteria for public health
insecticides for pesticide registration - Part 5: Vaporizing mats**

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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 5 of GB/T 13917 "Indoor Efficacy Tests 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 13917.5-2009 "Indoor Efficacy Testing and Evaluation of Sanitary Insecticides for Pesticide Registration - Part

5. Electrothermal Treatment". Compared with GB/T 13917.5-2009, the main technical changes in "Mosquito Repellent Tablets" are as follows, apart from structural adjustments and editorial modifications.

a) Added terms and definitions for "electric mosquito repellent mats," "sensitive strains," and "knockout time" (see Chapter 3);

b) The requirements for the test reagents have been increased (see 4.1);

- c) The requirements for the test targets have been changed (see 4.2, Chapter 2 of the 2009 edition);
- d) Requirements for mosquito suction tubes or mosquito suction devices, stopwatches, and counters have been added (see 5.4, 5.5, and 5.6);
- e) The test conditions were changed (see 6.1,

4 Test materials

4.1 Test reagents Please specify the generic name or code of the drug in Chinese/English, dosage form, content of active ingredient, manufacturer, production date or batch number, etc.

4.2 Test Target *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.

5 Instruments and Equipment

5.1 Cylindrical Device The cylindrical device is shown in Figure 1. A colorless and transparent cylinder (C) is mounted on a support (I), and there is a colorless and transparent circular plate (E, F) on the top and bottom of the cylinder. The upper circular plate (E) has a hole in the center, which is plugged with a rubber stopper (G); the lower circular plate (F) has a hole in the center, which is covered with a 12-mesh (1 mesh = 2.5cm) iron sieve. (J), During the test, the electric mosquito repellent coil (A) heater (B) was placed below the round hole, and the round hole was plugged with a rubber stopper (H) before and after the test; the cylinder and the upper and lower... The joints of the circular plates are sealed with sealing grooves or rubber gaskets (D1, D2).

5.2 Box Assembly The box assembly is shown in Figure 2. A glass box (B) is mounted on a support (E). A small door (C) is located at the lower corner of one side of the box. There is also an insect release hole (F) at the top, which can be sealed with a rubber stopper, and another side is a large door (D). The device should be sealed during testing.

5.3 Electric Mosquito Repellent Mat Heater Voltage 220V.

5.4 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 $3\text{m}^3/\text{min} \sim 5\text{m}^3/\text{min}$. 5.5-stopwatch Accuracy $\pm 0.5\text{s}$.

5.6 Counter Error 1000 ± 1 .

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.

6.3 Cylindrical Method

6.3.1 Time Period Settings Following the principle of "retaining the first, determining the last, interspersed with three," five time points were selected for efficacy testing. These included 1 hour of energization and the longest recommended duration of use of the test reagent. The test is conducted using two time points, the beginning and the end, and then three additional time points at equal intervals between these two points. Segment point.

6.3.2 Test Procedure A cylindrical apparatus (5.1) is used. Thirty test mosquitoes are collected and inserted through the central hole of the circular plate (E or F), then the rubber stopper (G or H) is tightened. [The mosquitoes are then ready for testing.] After the insects resume normal activity, the heater containing the tested electric mosquito coil (A) will be continuously heated in the fume hood to the corresponding time point. (B) Place it below the central hole of the circular plate (F) covered with a 12-mesh iron sieve (J), and secure it tightly to the central hole. Fumigate for 1 minute, then immediately remove the heater. Insert the rubber stopper (H) and start timing. Record the number of insects knocked down at regular intervals, with an observation period of 20 minutes. The test should be repeated 3 times or more. Repeat the above steps. After each test period, the test apparatus should be cleaned.

6.4 Box method

6.4.1 Test Period Settings Same as 6.3.1.

6.4.2 Test Procedure A square box apparatus (5.2) was used. Fifty test mosquitoes were collected and placed into the release hole (F), and the rubber stopper was tightly sealed. After the test mosquitoes resumed normal activity, they were... The small door (C) is placed inside a heater (on top of the heater) that has been continuously heated in a fume hood to the corresponding time point, and contains the test electric mosquito coil. Cover the test chamber with a 12-mesh iron sieve, immediately seal the box, and start timing. Record the number of insects knocked down at regular intervals. The observation period is [duration missing]. 20 minutes. The test should be repeated 3 times or more. The test apparatus should be cleaned after each time period.

7. Calculation The data from repeated tests were used to establish a toxicity regression equation using linear weighted regression, and KT_{50} was calculated.

8.1 Cylindrical Method KT

50. All 5 time periods are ≤ 8.0 min, the tested product is qualified.

8.2 Square box method KT

50. All 5 time periods are $\leq$

10.0 min, the measured product is qualified.

9 Results and Report Writing

Based on the statistical results, an analysis and evaluation were conducted, and an experimental report was written, including detailed information on the test reagents, the selection of target materials, and the environment. Condition control, experimental treatment, replication and investigation methods, statistical analysis of results, etc., and list the raw data.