



Standard Test Method for Nonresidual Liquid Household Insecticides Against Flying Insects¹

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1. Scope

1.1 This test method covers the determination of the relative efficiency of household and industrial-use, contact insecticides dissolved in base oils.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 Definitions:

2.1.1 *culture, n*—all adult flies resulting from the seeding of eggs collected at one time on a given date.

2.1.2 *knocked-down*—pertaining to all test flies incapable of coordinated movement (moribund).

3. Summary of Test Method

3.1 Two methods for evaluating liquid household insecticides are permitted as follows:

3.1.1 For the small group method,² a minimum of 10 replicates of approximately 100 flies each are exposed to a total of 12 cm³ of test insecticide per replicate.

3.1.2 For the large group procedure, use two separate fly cultures, four randomized tests with 500 flies per replicate using 10 replicates.

3.2 The difference in percentage mortality of the Official Test Insecticide (OTI) (see 8.2.1) and the test insecticide is the basis for evaluating the efficacy of the test insecticide by the small and large group test methods.

4. Significance and Use

4.1 This test method provides a satisfactory means of determining the relative efficacy of spray formulations against house flies (*Musca domestica*, L.).

4.2 Test data obtained by this test method may also be adequate to support label claims for the use of the product against mosquitoes, gnats, flying moths, wasps, and certain other small flying insects. This test method is not designed to measure the residual action of the spray formulation.

4.3 As a biological test, it is subject to the variations that accompany the reactions of living organisms. It should be employed under the supervision of personnel familiar with the biological testing of insecticides.

5. Apparatus

5.1 *CSMA Pesticide Atomizer*, fitted with a No. 631 cut off and a glass reservoir.³

5.2 *Rearing Room*—A room of any convenient size, free of strong drafts, and maintained at $80 \pm 2^\circ\text{F}$ ($27 \pm 1^\circ\text{C}$) with a relative humidity of $50 \pm 5\%$. This room must be separate from the testing room and ventilated to minimize odors.

5.3 *Testing Room*, maintained at $80 \pm 2^\circ\text{F}$ ($27 \pm 1^\circ\text{C}$) and a relative humidity of $50 \pm 5\%$. This room may be of any convenient size capable of holding the standard Peet-Grady chamber with adequate additional space to permit efficient performance of the test.

5.4 *Peet-Grady Test Chamber* (see Annex A1.).

5.5 *Cylindrical Glass Battery Jars*, 6 in. (150 mm) in diameter and 9 in. (230 mm) high, or other suitable containers, to be used as fly larval medium containers.

5.6 *Calibrated Pipet*, or graduate with 0.1-cm³ graduations.

5.7 *Electric Fan*.

5.8 *Air Separation Apparatus for Recovering Puparia*, constructed according to the specifications of Goodhue and Linnard.⁴

5.9 *Fly Cages*, providing at least 1 in.³ (16.4 cm³) of space per fly with a minimum of two sides and the top screened. Cages shall be constructed of metal or other suitable material and fitted with a sleeve opening, rubber membrane, or a door.

¹ This test method is under the jurisdiction of ASTM Committee E35 on Pesticides and is the direct responsibility of Subcommittee E35.12 on Insect Control Agents.

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² "Peet-Grady Method," Official Method of the Chemical Specialties Manufacturers Association for Evaluating Liquid Household Insecticides.

³ Available from Chemical Specialties Manufacturers Assn. (CSMA), 1913 Eye St., N.W., Washington, DC 20006.

⁴ Goodhue, L. D., and Linnard, C. E., "Air Separation Apparatus for Cleaning Fly Pupae," *Journal of Economic Entomology*, Vol 43, 1950, p. 228.