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

GB/T 17980.51-2026

Replacing GB/T 17980.51-2000

**Pesticides - Guidelines for field efficacy trials - Part 51:
Herbicides against weeds on non-crop land**

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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 51 of GB/T 17980, "Guidelines for Field Efficacy Tests of Pesticides". GB/T 17980 has published the following... part.

1. Insecticide control of lepidopteran borers in rice;

2. Insecticide Control of Rice Leaf Roller;

3. Pesticide Control of Rice Leafhoppers; ...

51. Herbicides for Weed Control in Non-Cultivated Land; ...

---Part 149: Insecticides for the Control of Red Imported Fire Ants. This document supersedes GB/T 17980.51-2000 "Guidelines for Field Efficacy Testing of Pesticides (I) Herbicides for Control of Weeds in Non-Cultivated Land", and is consistent with...

Compared with GB/T 17980.51-2000, apart from structural adjustments and editorial changes, the main technical changes are as follows:

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the 2000 edition);

b) The environmental conditions requirements have been changed (see 4.2,

2.3 of the.2000 edition);

c) The requirements for the pharmaceutical preparations have been changed (see 5.2, 3.1 of the.2000 edition);

d) The requirements for pesticide application equipment have been changed (see 6.2, 3.3.2 of the.2000 edition);

1 Scope

GB/T 17980.51-2026 is the Chinese national standard covering the trial protocol for total vegetation control - railway ballast, substations, roadsides and industrial sites, where the requirement is a long residual and the risk is movement off the treated area. The GB/T 17980 series is what a pesticide registration in China rests on: it fixes the plot design and replication, the application rate and timing, the assessment of the pest or weed and of the crop, and the analysis of the result. It replaces GB/T 17980.51-2000 and has been in force since 1 September 2026, one of the parts of the series revised together. It was issued on 27 February 2026 and has been in force since 1 September 2026, replacing GB/T 17980.51-2000. 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.

This document describes the methods for field plot trials of herbicides for controlling weeds on non-cultivated land. This document applies to field efficacy plot trials and safety evaluations of herbicides for the control of weeds on non-cultivated land.

4 Test conditions

4.1 Selection of weeds as test subjects The weeds in the test site should be representative, the weed density should meet the experimental requirements, and the weeds should be evenly distributed. The weed community composition should be the same as that of the test herbicide. The herbicide spectrum is consistent. Record the Chinese and Latin scientific names of various weeds.

4.2 Environmental Conditions Soil conditions (soil type, organic matter content, pH value, soil moisture, fertility) and tillage practices should be uniform across all experimental plots. Record the herbicides used before the test application and avoid selecting plots that may affect the effectiveness of the tested herbicides.

5 Experimental Design and Arrangement

5.1 Test Treatment The following treatments should be set up. test reagent, control reagent, and blank control.

5.2 Reagents

5.2.1 Test reagents The test reagent treatment includes three dosages. high, medium, and low. Additional dosages may be set according to experimental requirements in special cases. Please specify the common Chinese/English name of the reagent. Code, dosage form, active ingredient content, manufacturer, production date or batch number, etc.

5.2.2 Control reagent The control agent should be a registered, locally commonly used product with good efficacy and safety in actual use. The type and action of the control agent should be specified. The formulation and herbicidal spectrum should be the same as or similar to the test agent, and the registered dosage and application method should be used. If the test agent is a mixture, it should also be... Each active ingredient, in single-dose form, serves as a control. Specific measures may be taken depending on the purpose of the experiment. Record the Chinese/English generic name, dosage form, active ingredient content, manufacturer, registration number, production date or batch number, and application information of the control drug. Dosage, etc.

5.3 Community Arrangement

5.3.1 Layout of the community Different treatment plots in the experiment were arranged in a randomized block design. In special cases, comparative, in-between, or irregular arrangements may be used. List them and explain them.

5.3.2 Area of the community and duplication The area of the planting area is 30m² to 50m², and the shape is rectangular. When spraying with a sprayer transported by rail on the railway, the area of the planting area is up to... The minimum is 100m². Number of repetitions. no less than 4 repetitions.

6 Applying pesticides

6.1 Application Method Follow the test requirements and label instructions, and ensure that the application of pesticides is compatible with local scientific agricultural practices. Record the application methods and procedures.

6.2 Application equipment Use commonly used equipment, or select equipment according to the test requirements. When using the spray method for pesticide application, choose a sprayer with stable pressure and a fan-shaped nozzle. The sprayer is used to apply the pesticide, ensuring that the pesticide is evenly distributed throughout the entire test plot or accurately and directionally distributed to the target area. Record the amount used. All information including equipment type and operating conditions (working pressure, nozzle type, nozzle diameter, flow rate, etc.).

6.3 Application time and frequency Follow the test requirements and label instructions. If the application time is not specifically specified on the label, it should be determined based

on the test objective and the test reagent. The application of pesticides is based on their therapeutic properties. Application time is categorized by application method.

a) Soil-sealing application of pesticides;

b) Foliar spraying. Record the date and time of application, as well as the growth status of the weeds at the time of application (growth stage and the proportion of each type of weed, etc.).

6.4 Dosage and Water Consumption Apply the pesticide according to the test requirements and the dosage and water usage specified on the label. The dosage of the pesticide is expressed in g/hm² (grams per hectare) of active ingredient. Dosage is expressed in mL/667m² (milliliters per 667 square meters) or g/667m² (grams per 667 square meters), and water consumption is expressed in L/hm² (liters per hectare). The volume is expressed in liters per hectare (L/667m²) and liters per 667 square meters (L/667m²). If the water volume is not specified in the test, it can be determined based on the method of action of the test agent and the type of sprayer. The water consumption should be determined based on the type of pesticide and local production conditions. Accurate dosage should be ensured during pesticide application; the dosage deviation between replicates of the same treatment should not exceed [a certain value]. $\pm 5\%$. Record factors affecting efficacy, duration of action, and selectivity.

6.5 Data requirements for pesticides used to control pests, diseases, and non-target weeds If other agents are used during the trial, those that have no effect on the test agent or the target weeds should be selected, and all plots should be treated uniformly. It should be used separately from the test and control agents, and the name, timing of administration, method of administration, dosage, and target of action of the agent should be recorded. Grade.

7.1 Weed Survey

7.1.1 Survey Methodology Describe in detail the symptoms of weed damage (such as growth inhibition, chlorosis, deformity, etc.) to accurately explain the mechanism of action of the herbicide. Investigate the weed species, number of plants, coverage, and biomass (fresh weight of aboveground parts) in each treatment area. Use the following absolute number method or estimation method.

a) Absolute number survey method (numerical measurement). Investigate the total number of plants or biomass (fresh weight of aboveground parts) for each weed species. In special cases, specific organs of the weeds (such as grasses) may also be investigated. (e.g., number of tillers of weeds). Conduct a survey of the entire plot or take 3-5 sampling points in each plot, with each sampling point... A sampling survey was conducted at a scale of 0.25m² to 1m².

b) Estimated value survey method (visual inspection). Each herbicide-treated area was