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

GB/T 32250.3-2022

**Agricultural and forestry machinery - Inspection of sprayers in
use - Part 3: Sprayers for bush and tree crops**

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents" drafted.

This document is part 3 of GB/T 32250 "Detection of Sprayers in Use for Agricultural and Forestry Machinery". GB/T 32250 has been released to the next part.

--- Part 1. General;

--- Part 2. Horizontal boom sprayers;

--- Part 3. Sprayers for shrub and tree crops;

--- Part 4. Stationary and semi-mobile sprayers.

This document replaces GB/T 32250.3-2015 "Testing of sprayers in use - Part 3. Air-assisted spraying for shrub and tree crops

Compared with GB/T 32250.3-2015, the main technical changes are as follows.

- a) The requirements for transmission components are deleted (see 4.1 of the 2015 edition);
- b) Added the requirements for leakage (see 4.1);
- c) Deleted the relevant requirements for the safety valve and leakage at the pressure end of the liquid pump (see 4.2.3 and 4.2.4 of the 2015 edition);
- d) The requirements for the liquid pump air chamber (see 4.2.3) and hydraulic stirring (see 4.3.1) have been added;

- e) Changed the requirements for the liquid tank cover (see 4.4.1, 4.4.1 of the.2015 edition);
- f) Changed the requirements for inhalation dosing devices (see 4.4.3, 4.4.3 and 4.4.8 of the.2015 edition);
- g) Changed the requirements for adding water to the liquid tank (see 4.4.7, 4.4.7 of the.2015 edition);
- h) Deleted the requirement that "the pointer of the pressure gauge should remain stable" (see 4.5.6 of the.2015 edition);
- i) Changed the requirements for the diameter of the pressure gauge (see 4.5.2.4, 4.5.7 of the.2015 edition);
- g) Deleted the content of hard pipe and hose leakage (see 4.6.1 of the.2015 edition);
- k) Deleted the requirement that the nozzle should be adapted to the pesticide application rate (see 4.8.1 of the.2015 edition);
- l) Changed the requirements for pressure drop (see 4.9, 4.9.3 of the.2015 edition);
- m) Changed the requirements for the measurement of spray volume (see 4.9.3.2, 4.9.2 of the.2015 edition);
- n) Changed the requirements for fans (see 4.10, 4.10 of the.2015 edition);
- o) Added requirements for spray guns and nozzles (see 4.11);
- p) the preparation of the sprayer was deleted (see 5.1 of the.2015 edition);
- q) Changed the requirements for liquid pump flow test (see 5.2.1, 5.2.1 of the.2015 edition);
- r) The requirements for other sprayers (see 5.2.1.2.3) and the requirements for pressure pulsation of the liquid pump in the liquid pump flow test (see 5.2.1.2.3) have been added.
- 5.2.2);
- s) Deleted the requirement for the pressure gauge to be calibrated once a year (see 5.2.2.1 of the.2015 edition);
- t) The requirements for the selection of measuring points and the stability of the pressure in the calibration method of the sprayer pressure gauge are added (see 5.3.2);
- u) Changed the general requirements for flow meters used to control the rate of application per hectare (see 5.4.1, 5.2.3 of the.2015 edition);
- v) the requirements for measuring the application rate per hectare (see 5.4.2 and 5.4.3) and the forward speed control system (see 5.5) have been added;
- w) Changed the requirements for the measurement of the spray volume of the nozzle (see 5.6, 5.2.4 of the.2015 edition);

x) The requirements for the measurement of the pressure change (see 5.8) and the measurement of the pressure distribution (see 5.9) when the spray is turned off have been added;

y) Deleted the test summary table, test report and related appendices (see Chapter 6, Chapter 7, Appendix A and Appendix B of the 2015 edition).

This document is equivalent to ISO 16122-3:2015 "Testing of agricultural and forestry machinery in-use sprayers - Part 3. Shrub and tree crops

Sprayer".

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

The sprayer is mainly used for spraying insecticides, herbicides, fungicides, defoliants and other plant protection products to prevent and control crop diseases, pests and weeds, improve

High yield per unit area plays an irreplaceable and important role, and it is widely used and involves a wide variety of products.

The sprayer sprays the plant protection product on the target with the goal of spraying only the amount required by the target, contaminating operators and off-target streams

The amount of drug lost to the environment is kept to a minimum. Under normal use and regular maintenance, a properly designed and well-made sprayer should be able to

Normal continuous operation. However, after the sprayer is used in the field, it often produces serious abrasion and damage, even in comparison with the level of agricultural production technology.

In advanced areas, it is also difficult to achieve adequate maintenance. Therefore, clarifying the use requirements and testing methods of the sprayer in use is beneficial to the use of the sprayer.

The test of spraying equipment, prolong the normal continuous operation time of the sprayer in use, reduce the use of pesticides, improve the safety and work efficiency.

At present, in terms of the safety of plant protection machinery and the potential risks of environmental pollution, there are GB 10395.6 "Agricultural and forestry tractors and machinery

Safety Technical Requirements Part 6. Plant Protection Machinery, GB/T 39515 Environmental Requirements for Agricultural and Forestry Machinery Sprayers, etc.

Standard, the design and manufacture requirements and performance test methods of

sprayer products are specified. However, standardizing the testing requirements and methods for in-use sprayers does not

Only the initial performance of the sprayer needs to be considered, but also factors such as use, maintenance and repair to ensure that the sprayer continues to perform well.

According to the structure and product type of international standards, GB/T 32250 "Testing of Sprayers in Use of Agricultural and Forestry Machinery" currently consists of 4 parts constitute.

--- Part 1.General;

--- Part 2.Horizontal boom sprayers;

--- Part 3.Sprayers for shrub and tree crops;

--- Part 4.Stationary and semi-mobile sprayers.

This document is Part 3 of GB/T 32250 and is used together with GB/T 32250.1.

Inspection of agricultural and forestry machinery in-use sprayers

Part 3.Sprayers for Shrub and Tree Crops

1 Scope

This document is used in conjunction with GB/T 32250.1-2022 and specifies the technical requirements for the detection of sprayers for shrub and tree crops in use and test methods.

The technical requirements mainly relate to the potential risk of environmental pollution caused by the sprayer and the performance of the equipment to achieve good spraying effect.

Note. GB/T 32250.1-2022 specifies the protection requirements for inspectors during the test.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 20183.2-2006 Plant Protection Mechanical Spray Equipment Part 2.Test Methods for Hydraulic Sprayers (ISO 5682-2).