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

GB/T 40331.1-2021

**Crop protection equipment - Spray deposition test for field crop
- Part 1: Measurement in a horizontal plane**

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Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

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"

Drafting.

This document is the first part of GB/T 40331 "Testing the amount of spray deposition of field crops for plant protection machinery". GB/T 40331

The following parts have been released.

---Part 1. Test on level ground;

---Part 2. Testing on crops.

The translation method used in this document is equivalent to ISO 24253-1.2015 "Plant Protection Machinery Field Crop Spray Deposition Test No.

Part 1. Testing on level ground.

This document adds a chapter "Normative Reference Documents".

This document was proposed by China Machinery Industry Federation.

This document is under the jurisdiction of the National Agricultural Machinery Standardization Technical Committee (SAC/TC201).

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Introduction

The effect of using plant protection products (PPP) and whether it is safe for crops and the environment is largely affected by spray efficiency.

In downward (spraying) spraying operations, such as spraying to the ground, the dosage of the active ingredient remaining on the target surface and its change should be measured accurately and accurately.

The situation.

The location, number, and sampling plan of the measuring points used to monitor spray deposition need to be defined in a standard way so that different experiments can be compared

the result of.

Tests can be used to quantify or describe field conditions or comparisons between tools.

The spray system can be compared with the benchmark system.

This document does not deal with sprays that are sprayed outside the target area, deposited on the crop canopy, or lost due to spray drift in the air. If

This document of ISO 24253 is combined with the field measurement method of spray drift given in ISO 22866 [5], which can be used to evaluate the total spray level.

Balance the situation. On the other hand, combined with the measurement of field boom movement (see ISO 14131 [2]) can be used to evaluate the effect of field boom movement.

The amount of spray deposition and the influence of its changes.

The deposition amount of horizontal spray rod downward spray operation will be affected by the characteristics of the nozzle, the height of the nozzle, the stability of the nozzle, the operating speed, and the meteorological conditions.

And other spray assist devices (such as pneumatic assist). These variables can be used as test elements to determine the amount of spray deposits and changes.

Different circumstances.

GB/T 40331 "Testing the amount of spray deposition of field crops for plant protection machinery" consists of two parts.

---Part 1.Test on level ground;

---Part 2.Testing on crops.

Plant protection machinery field crop spray deposits

Test Part 1.Test on level ground

1 Scope

This document specifies the field test method of spray deposition amount when the horizontal boom sprayer sprays downwards to determine the spray on the flat area.

Quantity and distribution.

This document allows appropriate flexibility in the preparation of field trials, but specifies standardized measurement procedures that can be used for comparison.

Compare different field test results, or compare with laboratory test, as described in ISO 5682-2 [1].

This document does not apply to spray systems that rely on plant canopy for effective deposition (such as directional spray, electrostatic spray, ultra-fine mist spray, and variable spray).

Amount spray).

This document is not applicable for regulatory purposes.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Spraydose

The amount of active ingredient (pesticide or tracer) applied.

Note. The solid unit is kilogram per hectare (kg/hm²) or the liquid unit is liter per hectare (L/hm²).

3.2

Spray volume

The amount of spray liquid applied.

Note. The unit is liters per hectare (L/hm²).

3.3

Spray deposition

The amount of sprayed liquid deposited on the collector.

Note. It can be expressed as the amount of spray per unit area ($\mu\text{L}/\text{cm}^2$, L/hm^2), or as a percentage relative to the theoretical spray amount or spray dose.

3.4

Collector

Artificial target for collecting spray liquid.

Note. An example of a collector for measuring spray deposition is given in Appendix A.

3.5

Tracer

A traceable material representing pesticides, used for quantitative analysis of spray deposition.

[Source. ISO 22522.]