

Pine Wood Nematode High-Sensitivity Field Nucleic Acid Test Kit — Instructions for Use (IFU)

Product Name

Generic name: Pine Wood Nematode High-Sensitivity Field Nucleic Acid Test Kit

Package Specification

16 tests/box

Intended Use

This kit amplifies nucleic acid sequences specific to Pine Wood Nematode and uses directional signal amplification technology to achieve high-sensitivity detection of the target nucleic acid. Applicable sample types: pine sawdust, nematode suspension, individual nematodes, and other sample types.

Test Principle

This kit amplifies nucleic acid sequences specific to Pine Wood Nematode and uses directional signal amplification technology to achieve high-sensitivity detection of the target nucleic acid.

Main Components

Table 1. Main components

No.	Component	Main ingredients	Specification	Qty.
1	BX enzyme pellet	Primers, probe, endonuclease, deoxyribonucleoside triphosphates, polymerase	16 tests/pack	1
2	BX positive control	Target plasmid containing the target fragment and internal-control plasmid	280 μL/tube	1
3	Negative control	Nuclease-free water	280 μL/tube	1
4	Lysis solution	Buffer, resin	16 tubes/bag	1
5	Diluent	TE buffer, etc.	16 tubes/bag	1
6	Sampling spoon	—	16 pcs/bag	1

Storage Conditions and Shelf Life

Store at 2–8°C. Shelf life: 12 months.

Extraction Procedure

1.

Before starting the test, turn on the metal dry bath, set it to 95°C, and begin heating.
2.

Remove the required lysis-solution tubes (green screw-cap microcentrifuge tubes) and diluent tubes (natural-color microcentrifuge tubes), and flick downward 3 times.
3.

Prepare the sample as follows: Sawdust sample—place half a level spoonful of sawdust on weighing paper, transfer the sawdust into the lysis solution, tighten the cap, mix by shaking up and down for 10 cycles, and flick by hand 3 times so the sawdust is wetted by the lysis solution. Nematode suspension—under a stereomicroscope, pick one nematode or directly add 50 μL of nematode suspension to the lysis solution; tighten the cap, mix by shaking up and down for 10 cycles, and flick by hand 3 times.
4.

Incubate the lysis-solution tube in the metal dry bath at 95°C for 5 min. Remove and let stand at room temperature for 2 min. Flick the tube downward 3 times, transfer 50 μL of supernatant along the lower-middle wall of the diluent tube, close the cap tightly, mix by shaking up and down for 10 cycles, and flick gently 3 times to collect the liquid at the bottom. Use this as the nucleic acid solution for subsequent testing.

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Test Procedure

1. Transfer 50 μ L of the nucleic acid solution prepared above along the middle wall of an enzyme-pellet tube. After all enzyme-pellet tubes have been loaded, visually confirm that the nucleic acid solution has contacted and completely dissolved the enzyme pellet.
2. Close the strip-tube cap. Hold the cap and bottom of the strip tube with the thumb and index finger, respectively, mix by shaking up and down for 10 cycles, and flick downward gently 3 times to collect the liquid at the bottom. Place the strip tube in the palm-sized fluorescence detector for testing.

Note: Manual mixing is a critical step. Before starting the test, make sure the strip-tube cap and the lid of the palm-sized fluorescence detector are closed tightly.

Result Interpretation

At the end of the test program, the palm-sized fluorescence detector automatically analyzes and determines the result.

Table 2. Result interpretation for the palm-sized fluorescence detector

Assessment	TT display	Displayed result
Negative control	—	NC
Positive control	$TT \leq 10$	PC
Positive sample	$TT \leq 20$	Positive
Negative sample	—	Negative

Equipment and Consumables Required but Not Provided

1. Personal protective equipment (disposable laboratory gloves, laboratory coat, protective eyewear, etc.).
2. Liquid-waste container and disinfectant.
3. Timer.

Precautions

1. Do not use expired reagents.
2. Perform the entire procedure in a nuclease-free environment.
3. Wear powder-free gloves when handling reagents and nucleic acids.
4. To avoid cross-contamination, filtered pipette tips are recommended.
5. All sample tubes, centrifuge tubes, tips, reagents, and test tubes are single-use.
6. Do not mix reagents from different product lots.

IFU Approval and Revision Date

June 2, 2026

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