

ICS 65.020.01
CCS B 16

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

SN/T 5212-2020

Water pine identification method

水松鉴定方法

(English Translation)

Issued on: December 30, 2020

Implemented on: July 1, 2021

Issued by: General Administration of Customs

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020.

This document was proposed and managed by the General Administration of Customs of the People's Republic of China.

Drafting organizations of this document. Fuzhou Customs of the People's Republic of China, China Academy of Inspection and Quarantine Sciences, Qingdao, People's Republic of China customs.

1 Scope

This document specifies the identification method of cork.

This document is applicable to the identification of water pine.

2 Normative references

There are no normative references in this document.

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1

Seminiferous scale

The gymnosperm megaspore leaf ball is composed of megaspore leaves, arranged in a spiral on the longitudinal axis, the upper part is larger and the top part is called Seed scales, also called pearl scales or fruit scales. It is generally believed that the pearl scales develop from megaspore leaves.

3.1.2

Bract scale

The gymnosperm megaspore leaf ball is composed of megaspore leaves, arranged spirally on the longitudinal axis, and the smaller thin slices below are bract scales, generally the bracts are considered to be megaspores that have lost their reproductive capacity.

3.1.3

Terminal bud

The general term for the buds formed at the top of the stem. When the immature embryo undergoes polar differentiation, the apical buds are initially formed, and the apical buds are the most active growth.

Longer one.

3.1.4

Axillary bud

A kind of lateral buds, especially the fixed buds that emerge from the leaf axils.

3.2 Abbreviations

The following abbreviations apply to this document.

4 Basic information of water pine

Chinese name. ??

See Appendix A for other information about water pine.

5 Principles of the method

Water pine may enter and exit the country in the form of cones, seeds, plant residues, plant specimens and seedlings. Cones, seeds and leaves of water pine Features and standard DNA barcodes are the main basis for identification of this species. When the morphological characteristics of cones, seeds and leaves are all intact, Characteristics as the basis for identification; for plant tissues with incomplete morphological characteristics such as seeds or leaves, the morphological characteristics shall be used as reference and molecular characteristics shall be used as the reference it is the main basis for identification.

Since the genus *Cortex* is a monotypic genus, identification of the genus *Cortex* is the identification of *Cortex*.

6.1 Equipment and appliances

Stereo microscope, electronic balance, magnifying glass, scalpel, dissecting needle, forceps, finger tube, petri dish, white porcelain plate, cotton, Sample bag, specimen holder, label, recording paper, specimen bottle, specimen box, conventional PCR instrument, micro spectrophotometer, electrophoresis instrument, gel Imaging system, high-speed refrigerated centrifuge, biological safety cabinet, oven, autoclave, mortar, shaker, water bath, ice maker, pure Water meter, vortex shaker, refrigerator, refrigerated mixing mill, micropipette (2 μ L, 10 μ L, 20 μ L, 100 μ L,.200 μ L, 1000 μ L), centrifuge tube (2 mL), PCR reaction tube (0.2 mL, 0.5 mL).

6.2 Reagents

Unless otherwise specified, all reagents are analytical reagents or biochemical reagents.

Plant genome extraction kit, ultrapure water, DNA Marker, agarose, nucleic acid gel dye, liquid nitrogen, deoxyribonucleoside Triphosphates (dNTPs), Taq polymerase, 10xPCR buffer, insect repellent, camphor extract, desiccant. Extract with modified CTAB method Reagents (see Appendix B).

7 Laboratory testing

Part of the original samples intercepted by the on-site quarantine is selected as the samples to be inspected, and the number of samples (number of plants or quality) is 1/2 to 3/4 (compared to when there are few samples) as inspection samples, and the remaining samples as preservation samples. The samples submitted for inspection are less than 3 plants or 1.0 kg for full inspection.

8.1 Morphological identification method

Based on the morphological characteristics of Chinese fir family and water pine, the key to the genus of water pine and its related genera (see Appendix C), based on the morphology of seeds and fruits the key to the characteristic water pine and its similar genera and species (see Appendix D) is used to identify the species of suspected samples.

8.1.1.1 Stem

Evergreen or deciduous trees, with straight trunks, large branches or nearly whorls.

8.1.1.2 Leaf

The leaves are arranged spirally, scattered, rarely cross-opposed (*Metasequoia*), lanceolate, subulate, scaly or striped, the same leaves on the same tree Type or Type II.

8.1.1.3 Ball flower

The cones are unisexual, monoecious, and the stamens and scales of the cones are spirally arranged, rarely cross-opposed (*Metasequoia*); the male cones are small, Single or-clustered branch tops, or arranged in panicles, or leaf axils, stamens with (2-9) (usually 3-4) anthers, pollen without Air sacs; female cones are terminal or born on last year's branch near the top of branch, pearl scale and bract scale semi-connate (only the top is separated) or completely connate, or pearl scale Very small (*Cunninghamia lanceolata*), or degenerated bract scales (*Taiwan fir* genus), with 2 to 9 erect or anatrophic ovules at the base of the ventral surface of the pearl scale.

8.1.1.4 Cones

The cones are mature in the year and open when they are ripe. The seed scales (or bract scales) are flat or shield-shaped, woody or leathery, spiral-shaped or cross-opposed (*Metasequoia* spp.), which will gradually fall off after persisting or ripening. The ventral surface of the breeding scale (or bract scale) has 2 to 9 seeds.