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

LY/T 3186-2020

**Technological regulation for seedling breeding of wild plant
with extremely small populations**

极小种群野生植物苗木繁育技术规程

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed and managed by the State Forestry and Grassland Administration.

The organization responsible for drafting this standard. Institute of Forest Ecology, Environment and Protection, Chinese Academy of Forestry, Wuhan University, Chinese Academy of Sciences South Botanical Garden.

1 Scope

This standard regulates the principles, sexual and asexual breeding techniques for seedling breeding of very small populations of wild plants.

This standard applies to all kinds of wild plants with very small populations in my country. The protection of other rare and endangered plants can be referred to.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 6001 Technical Regulations for Nursery GB/T 16619 Forest Tree Seed Collection Technology LY/T 1882--2010 Technical Regulations for Tissue Culture and Seedling of Forest Trees LY/T 1000--2013 Container Seedling Technology LY/T 2652-2016 Technical specifications for the protection and propagation of very small populations of wild plants

3 Terms and definitions

GB/T 6001, GB/T 16619, LY/T 1882-2010, LY/T 1000-2013 and LY/T 2652-2016, as well as the following the terms and definitions apply to this standard.

3.1 Wild plant with extremely small populations

It refers to the narrow distribution area, long-term interference from external factors, showing population degradation and continuous decrease in the number of individuals, population and individual the population is extremely small, the smallest living population that has fallen below the limit of stable survival, and the wild plants that are on the verge of extinction at any time. Mainly include the following 3 types Type. (1) The wild population is extremely small, extremely endangered, and is at risk of extinction at any time; (2) Unique habitat requirements and narrow ecological range; (3) Potential base Because the value is not clear, its extinction will cause gene loss, reduction of biodiversity, huge loss of socio-economic value and relatively small population.

3.2 Sexual breeding

Also known as seed breeding, it means that plants use the seeds formed by double fertilization of male and female reproductive cells produced by parents to reproduce offspring.

process.

3.3 Asexual breeding

The process of plant reproduction does not involve the fertilization process of reproductive cells, and the process of breeding new individuals directly from a part of the mother's body, including skewer Various forms such as insertion, grafting and tissue culture.

3.4 Explant

Organs or tissue fragments used as materials for in vitro culture in plant tissue culture.

3.5 Primary culture

Refers to the process of cultivating cells, tissues and organs directly from the body.

3.6 Subculture

It means that after the callus grows on the medium for a period of time, the nutrients are exhausted, the water is lost, and some metabolites have been accumulated.

It is necessary to transfer these tissues to a new medium for cultivation.

3.7 Grafting propagation

It is a mode of asexual reproduction in which a part of plant vegetative organs is transplanted to other plants.

3.8 Cuttage propagation

Take a part of the plant's vegetative organs and insert it into the loose and moist soil or fine sand, and use its regeneration ability to make it root and branch.

Asexual reproduction of new plants. According to the different organs used, there are branch cuttings, leaf cuttings, root cuttings and bud cuttings.

4 Principles of breeding

4.1

The collection of materials should avoid affecting the growth, reproduction and regeneration of the original mother plant.

4.2

Maximize the number of individuals in the population through various methods of reproduction.

4.3

The number of breeding individuals of different phenotypes and different genotypes remains balanced.

5.1.1 Preparation

5.1.1.1

Before seed collection, determine the location and location of the species to be collected based on the individual population situation and seed demand combined with actual field surveys.

The number and period of seed collection.

5.1.1.2

Develop a seed collection plan, clarify seed collection methods and division of responsibilities, and prepare seed collection facilities and tools.

5.1.1.3

Observe the seed maturation process in time, grasp the characteristics of seed maturity, clarify the time of seed shedding, determine and announce the seed collection period.

5.1.1.4

Organize professional training for seed collectors.

5.1.2 Acquisition

5.1.2.1

Choose the mature plant that grows vigorously and is free of diseases and insect pests as the seed collection mother plant.

5.1.2.2

Strictly follow the safety protection measures to ensure the personal safety of the collectors.

5.1.2.3

The collection, labeling, packaging, transportation and storage must be carried out by trained professionals.

5.1.2.4

The collected seeds need to be temporarily encapsulated in a breathable cloth bag, attached with a label, and transported to the storage location as soon as possible.

5.1.2.5

The person in charge of seed collection carefully fills in the seed collection label and fills in the seed collection registration form.

5.1.2.6

The seed collection registration form must include important information such as the collector, collection time, location, and habitat conditions. The seed collection registration form shall refer to GB/T

16619 Appendix E. Fill in the contents of the registration form for forest tree collection.

5.1.3 Number of collections

5.1.3.1

At least 5 populations are collected for each species, and if there are less than 5 populations, each population must be collected.

5.1.3.2

At least 50 individuals shall be collected from each population. If there are less than 50 individuals, each individual must be collected.

5.1.3.3

The amount of seeds collected by each individual shall be judged with reference to the estimated number of individuals in the population and the amount of individual seeds.