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

LY/T 3089-2019

**Technical regulations for seed propagation of *Ilex chinensis*
Sims.**

冬青播种育苗技术规程

(English Translation)

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1 Scope

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 National Forest Seeds Standardization Technical Committee (SAC/TC 115).

This standard was drafted. Nanjing Forestry University, Jiangsu Institute of Botany, Chinese Academy of Sciences, Jiangsu Vocational College of Agriculture and Animal Science, Anhui Province Agriculture and Rural Development Bureau of Xinhang Town, Guangde County, Changshu Forestry Station, Jiangsu Province, Mopanshan Forest Farm, Jurong City, Jiangsu Hongtu Seedling Co., Ltd.

1 Scope

This standard specifies the collection and germination of *Ilex chinensis* Sims.

Archive management and other technologies.

This standard applies to the cultivation of holly seedlings.

2 2 Normative references the following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB 6000 Quality Classification of Main Afforestation Tree Seedlings GB/T 6001 Seedling raising technical regulations LY/T 2289 Forest tree seedling production and operation file LY/T 2290 Forest tree seedling label 3 3 Seed collection and germination 4 3.1 Acquisition and modulation it is advisable to choose a good local native mother tree with strong growth, no harmful organisms and high yield period to collect fruits. Collected from late November to early December Fully mature fruits are piled up. After the flesh is softened and rotten, the water is washed to remove impurities, and the seeds are obtained.

5 3.2 Lamination

The natural stratification method should be adopted as follows.

6 3.2.1 Use 500 mg/L GA3 solution to soak seeds for 48 h, with stirring from time to time, replace the GA3 solution every 12 h. Soak for 36 h, replace in the GA3 solution, the seeds floating on the surface of the solution are removed.

7 3.2.2 The sand is mixed with 500 mg/L GA3 solution to form wet sand. It is advisable to hold the sand in a hand and loosen it. Seed soaked with GA3 solution the seeds and wet sand are thoroughly mixed in a volume ratio of 1. 3.

3.2.3 The sand mixture should be stacked in a dry place, surrounded by bricks or wooden boards, with a height of 20 cm to 25 cm.

3.2.4 It should be covered with straw or other moisturizing materials, and the thickness is 3 cm ~ 5 cm.

3.2.5 Flip every 20 d in winter and every 15 d in other seasons, check the moisture content of wet sand when flipping, and add water in time.

3.2.6 The stratified germination time lasted until the early spring of the third year.

8 4 Field preparation 9 4.1 Field selection Select a convenient sandy loam or loam land with convenient transportation, flat terrain, good drainage, loose soil, and fertile soil, and the soil pH value is 6.0 ~ 7.0.

10 4.2 Land preparation One year before sowing, the ploughing ground was turned deep at the end of autumn and early winter and the depth was ≥ 30 cm. Combined with plowing and applying rotten organic fertilizer 15000 kg/hm² ~ 22500 kg/hm² or compound fertilizer from 750 kg/hm² to 1000 kg/hm². Rotary tillage and crushed soil before sowing in the following spring so as to remove weeds and perennial roots. Field Open drainage ditch around.

11 4.3 Making a bed

Should be used as a high bed, refer to GB/T 6001. The bed is 100 cm to 120 cm wide, the bed is 30 cm to 40 cm high, and the trail is 30 cm to 40 cm wide.

12 5 Sowing

13 5.1 Time

In March, when the average daily temperature is higher than 10 °C, sow seeds are sown.

14 5.2 Methods

Seeding, trench depth 3 cm-5 cm, row spacing 25 cm-35 cm, plant spacing 3 cm-5 cm, cover with soil or sawdust or rotten mushroom residue Cover, the thickness should be no exposed seeds, the bed surface is covered with 2 cm ~ 3 cm thick straw or other cover, the cover is properly watered to wet.

15 6 Seedling Management 16 6.1 Thin and fixed seedlings About 45 days after sowing,

the first thinning was started, and the distance between seedlings was 6 cm to 10 cm. At the same time, the buds could be transplanted and supplemented with thinning. To Later, according to the growth of seedlings, the seedlings were once or twice, and the seedlings were determined at the end of June.

17 6.2 Water and Fertilizer Management 18 6.2.1 Moisture at the emergence stage, sprinkle water at the right time to keep the bed moist. In the fast-growing period of seedlings, increase the watering frequency and watering amount appropriately. From late September, Gradually reduce the number of waterings. Eliminate standing water in a timely manner.

19 6.2.2 Topdressing in the seedling stage, spray 0.1% ~ 0.3% quick-acting nitrogen fertilizer every 10 ~ 15 days; in the rapid growing period of seedlings, spray with watering every 20 ~ 30 days or furrow application of available nitrogen fertilizer 3 kg/667 m² ~ 5 kg/667 m²; nitrogen fertilizer was stopped after the end of August.

20 6.3 Weeding and weeding Weeding in time with cultivating.

21 6.4 Pest control

22 6.4.1 Disease control Diseases at seedling stage mainly include root rot and leaf spot. After the seedlings are unearthed, spray half-volume Bordeaux liquid 100-150 times liquid or nail solution every 15-20 days.

800 to 1500 times liquid for prevention of frost. 10% antibacterial agent 401 acetic acid solution 800-1000 times solution or 75% chlorothalonil Wet powder 600-800 times, spray every 5-7 days until the disease is eliminated. Remove the diseased and dead seedlings in time.

23 6.4.2 Pest Control the main pests in the seed germination stage are ground tiger and cricket. Combined with the site preparation, the 5% phoxim granule formulation 60 kg/hm² ~ 75 kg/hm² Stir in the soil evenly to kill the tigers and slugs. The seedling pests mainly include Holly Stingray, Aphids, and Red Spider. Aphids, red occur for spiders and other insect pests, spray 50% fenitrothion EC 800-1000 times or 2.5% deltamethrin EC 1400-1600 times or 40% trichloride 1000-1500 times solution of acaricide EC; when holly scutella is present, it can be sprayed with 40% Wanling soluble powder 1500-2000 times solution or 48% le Spoon cream 1500-2000 times liquid; spray every 5-7 days until the pest is eliminated.

24 7 Nursery stock

25 7.1 Exit

After November, seedlings can be raised from the nursery. Seedlings should be tested according to GB 6000 before leaving the garden. The nursery stock should be attached with a label. The specific content of the label Rong et al. Execute LY/T 2290. When seedlings

cannot be planted along with them, fake planting shall be performed in accordance with GB/T 6001.

26 7.2 Quality Index Standards for nursery seedlings. ground diameter ≥ 0.40 cm, seedling height ≥ 45 cm, root length ≥ 10 cm, and the number of roots of class I side > 5 cm long ≥ 5 .

27 8 File management LY/T 2289 is implemented for file creation and management.