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Seed Propagation Cephalotaxus drupacea Sieb.et Zucc. in the Botanical Garden of Tashkent

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Abstract: ***C. drupacea plant is adapted to grow in the shadow and penumbral conditions, usually on the second tier . The experiments carried out on the germination of seedlings from seeds gave the following results: in the first year marked 22 % germination of seeds in the second year noted 19 % of seedlings in the third year marked 14 % germination. In the fourth year, too, are beginning to rise but still continue to grow.***

Keywords: morphogenesis, introduction, morphology, cotyledons.

1. Introduction

The family is represented by a single genus golovchatotissom (Cephalotaxaceae F. Neger), consisting of only 6 species. Golovchatotissovye phylogenetically closely related to the family podkarpovyh, especially with primitive members of the genus Podocarpus. According to some, its distinctive features, this family is a kind of intermediary between primitive Podocarpaceae and yew. Cephalotaxaceae evergreen, dioecious, rarely monoecious trees relatively low altitude (up to 10-15) or bushes [1]. Male cones almost spherical shape. Arranged in groups in the axils of the upper leaves of last year's shoots. Female cones are located in the axils of scale-like leaves at the base of last year's shoots, sitting on the extended leg and thickened capitate at apex. Cone consists of 3-4 pairs of opposite scales, thickened at the base. In nature, common in eastern India, Central and South China, Taiwanese Islands, Korea and Japan. Growing 400-2600 m above sea level. The leaves are dark green. The fruits of decorative, resistant to diseases. Cephalotaxus drupacea grows well in shady and penumbral areas under the trees forming a second tier [2]. The various taxa of Cephalotaxus are of interest and value not only as endangered sources of useful materials, but as exquisitely beautiful evergreens for a variety of modern landscapes, combining graceful habits and foliage with the tough stress resistance and ease of maintenance required by modern gardeners and landscape contractors. Cephalotaxus are slow-growing conifers with dark olive to black-green foliage. They are not only tolerant of shade butwith only one exception-perform well even in heavy shade, an unusual trait for a needled evergreen. Indeed, most Cephalotaxus produce the best foliage when given at least some shade, although some maintain excellent foliage color in either full sun or shade. Plum yews are extraordinarily heat tolerant in humid climates, another unusual trait for a needled evergreen. For this reason, they have been called "the yew of the south," although they can serve as excellent landscape plants in an area extending far beyond the Southeast. Once established, they are tolerant of extended dry periods such as those experienced during most of our eastern summers. However, they are not good choices for hot, dry climates like those in much of the southwestern United States. Cephalotaxus are relatively deer resistant (I have come to believe that no evergreen is totally deerproof). Deer feeding on plum yews have been reported in areas with very heavy deer populations (for example, central New Jersey and Pennsylvania). Even in these cases, however, with only one exception, deer turned to Cephalotaxus foliage only as a last resort. Currently, the Botanical Garden C. drupacea Sieb. et Zucc. It passes all stages of ontogeny, forming viable seeds. mass cultivation C. drupacea technology has not been developed. Mass cultivation of plants for the purpose of planting in the botanical garden as well as in other regions of the country is an urgent task. For wide-scale introduction of landscaping practices C. drupacea necessary to examine the sowing dates, especially root formation and development of agricultural practices of cultivation [6].

C. drupacea is an evergreen shrub. He's been introduced in 1955 in Tashkent Botanical Garden of the Institute of the gene pool of flora and fauna. Stem and branch type C. drupacea studied based seed production. There are several methods for the study of plant life forms, one of which F. Halle method which is designed for tropical trees. The study of long-lived plant morphogenesis is important. The architectural model that is part of their low-light. The concept of an architectural model of the concept is narrow in comparison with the life form, which covers only the process of growth [3].

2. Material and Methods

Introduced in Tashkent Botanical Garden Cephalotaxus drupacea Sieb.et Zucc. It belongs to the family Cephalotaxaceae F. Neger.

Located Tashkent Botanical Garden on the northern outskirts of Tashkent, on the tail of the Western Tien-Shan (right bank of the river. Chirchik), 1,5 km from the weather station Boz-Su. Altitude 480 m. The garden is almost flat, with a slight slope to the southeast. Soils cultural-irrigated, non-saline, in texture, loamy and clay, the water table is at a depth of 5-6 m. Tashkent Climate sharply continental, with long, hot, dry summers and short, mild, sometimes severe (1968 / 69g.) In winter. Spring (February, March, April) rainy and warm. Autumn brief, warm, dry, sometimes rainy.Winter is short (2-3 months), soft, sometimes quite severe, with unstable snow cover. Snow begins to fall from the end of November. The most abundant snowfalls are observed in

January. Snow for long, rarely more than a few days. The average annual air temperature 13,3ºS, 42,6^{0}S maximum, minimum. -29,9^{0}S. The average annual rainfall 359 mm. They fall unevenly -132 mm winter, spring -141, -17 in the summer, in the autumn of -69. In severe winters, the soil freezes to a depth of 10-12cm, but in some years - even up to 25-30 sm. According to climatic conditions Tashkent differs significantly from East Asia and is somewhat similar to eastern North America. The key distinction from the climate point of introduction of natural habitats is a discrepancy between the time of maximum precipitation.

The germination of seeds was studied by the method of T. Rabotnova (1960), M.G. Nikolaeva (1985), A.A. Molchanova and V.V. Smirnova (1967).

3. Results and Discussion

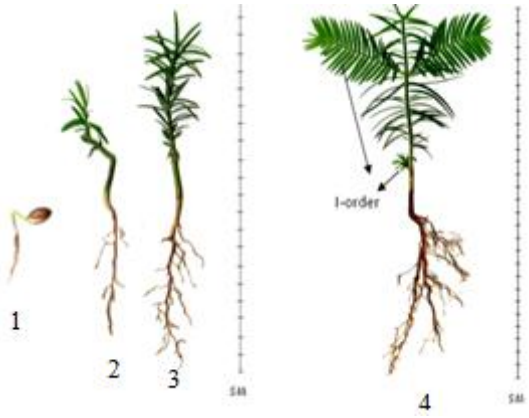
For the study, after stratification germination seed in the seeded to field conditions in 2015 October 3 versions of 100 pcs. (large, medium, small), (table). In 2016, during the second decade of May came the first shoots of the seeds sown in the month of October. New seedlings thickened, fleshy, pale yellow. In C. drupacea cotyledons including 2, length 15 mm, width of 2 mm. Cotyledon leaves upward, upper part dark green. The length of the primary real, leaves 6 mm, width of 2.5 mm, dark green, shiny, located in the shoots on the next. On shoots 1st year vegetative buds are located at the top and 4.2 on the sides of the main stem length of 7-8 sm, it terminates growth in October. Cotyledon leaves dry October and crumble in November.

Table: Indicators of germination

Options	Weight of 100 seeds (gr)	Terms of seed germination									Seed germination (%)
		May			Jun			Jul			
		1	2	3	1	2	3	1	2	3	
Large seeds	50,4	-	1	7	9	2	1	1	-	1	22
Average seeds	44,1	-	1	4	7	3	1	1	-	1	18
Small seeds	41,6	-	-	3	4	2	1	1	1	-	12

In march, the 2-nd year of vegetation to grow shoots the order I-2 sometimes 3 main stem dries up in July, in August the side. The length of the 2-year-old main stem up to 12-13 sm. The length of the shoots I-about 10,4 sm, 3-year 1,6 sm. On I-shoots are about to 2-4 buds. In 3-year old seedling since mid april will sprout from the root neck of shoots up to 8 I-order before the end of the year current their length reach up to 2-4 sm.

The needles are located mainly on the stem poochredno and shoots in I-order oppositely. Shoots formed in order II- 4-5 year-old seedlings. In the context of the Tashkent botanical garden C. drupacea seedlings grow slowly the first to the third year of vegetation. Shoots III formed in order of 7-8 year seedlings, length of the main stem reaches 90-100 sm of shoots I order the length can reach up to 25-35 sm, II of the order up to 12-15 sm shoots III order length is 5-7 sm. The leaves are arranged closer to the shoots I- II order from 5-6 seedlings fall flight. C. drupacea enters the generative phase with 10-12 years of vegetation, fruits are formed mainly in shoots II order. Adult fruit plants produced mainly in shoots IV-V order. Bloom in April, fruiting in September. Green fruit when ripe becomes the Reds. Fruits are large pits and covered with wood cladding. Fleshy peduncle. Branching in the kidney and C. drupacea opposite, coating monetopodobnoy shell.



Dynamics of growth of seed C. drupacea
1- young seedling, 2,3-flight one seedling, 4 two-year seedling.

4. Conclusion

Shoots C. drupacea appeared in may and July of the seeds sown in the autumn. Seed germination was 22%.

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