

GERMINATION OF ALCEA ROSEA L. (HOLLYHOCK) UNDER LABORATORY CONDITIONS

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Abstract: In this article, an analysis of the germination and biometric characteristics of Alcea rosea L. (Hollyhock) seeds under laboratory conditions in the Nukus region is presented. The study focused on the germination and fruiting biology of hollyhock, taking into account the biophysical and ecological factors of the Nukus region.

Keywords: Nukus condition, Hollyhock, germination, fruiting.

The law and resolutions regarding the creation of the base for increasing the cultivation and processing of raw cotton, as well as improving its quality and promoting the efficiency of its use, by conducting scientific research on "Measures for Reviving the Cotton Industry" initiated by the President of the Republic of Uzbekistan, under the number 4901, were adopted to ensure the implementation of the law and decisions. These measures also include the study and improvement of cultivation techniques for cotton plants belonging to the local flora, as well as providing them to local pharmaceutical companies, in addition to integrating educational, scientific, and manufacturing processes. The introduced cotton species, known as " Alcea rosea," is a multi-year plant, growing between 80-250 cm in height, and is primarily used as an annual plant under introduction conditions. It has large leaves with a pinnate appearance. The flowers are large, with a diameter of 12 cm, appearing in various shades of red and black, with a bell-like shape and clustered together. The flowering period is from July to September. Alcea rosea's native habitat is the Fergana Valley. In Uzbekistan, it has been introduced as a decorative and raw cotton plant. Alcea rosea usually multiplies through its seeds. It is best grown in fields with good sunlight. It prefers well-drained soil. For successful cultivation of it, it is essential to provide ample phosphorus and nitrogen fertilizers for long-term growth and high flower production. During the early growing season, it's recommended to apply 30-40 tons of organic manure per hectare or 45 kg of nitrogen and 60 kg of phosphorus fertilizers per 20 tons of organic manure. The fields should be prepared with 25-30 cm deep furrows and 90 cm apart rows. It, known as Alcea rosea L, is planted early in spring. Seeds are sown to a depth of 2-3 cm. On average, 10-12 kg of seeds is required per hectare. Seeds are planted with the help of a seed drill. Cotton plants start flowering in April. If cotton plants are spaced too closely, for every 3 kg of seeds, it may result in poor cotton formation. The flowering period of Alcea rosea is typically from June to August. In September, the formation of cotton bolls begins, and the cotton bolls are harvested at the end of the month. The yield averages around 6-8 quintals per hectare.

Cultivation tasks begin with the first plowing when the rows are 15-20 cm apart, and 1-2 cotton plants are left in each row. Rows are then closed, and stray plants are removed.

Throughout the growing season, the cotton field is irrigated, with the first irrigation around March 13 (in May-1, June-July-August-2-3, and September-2). Irrigations continue every 2-3 weeks, and by the time the cotton needs it, the rows are closed, and stray plants are removed.

The study aimed to assess the viability of Alcea rosea L. (Hollyhock) seeds under laboratory conditions in 2023.

To promote healthy growth, taller stems, and higher flower production, cotton plants receive two applications of nitrogen fertilizer per hectare at a rate of 50 kg each. The first application is 15-20 days after cotton formation, and the second one is at the beginning of flowering. Additionally, special attention should be given to proper crop rotation, efficient water supply, and well-fertilized soil. In such cotton fields, the agronomic practices for growing cotton are similar to those for industrial crops, but the distance between cotton plants is 20-25 cm. The flowering period of Alcea rosea is typically from June to August. In September, the formation of cotton bolls begins, and the cotton bolls are harvested at the end of the month. The yield averages around 6-8 quintals per hectare.

Under laboratory conditions, Petri dishes were used for germination. Seeds of Alcea rosea L. were obtained from the Botany department to determine their germination viability. On April 20, 2022, seeds were sown in Petri dishes.

The results of the scientific research yielded the following conclusions:

The number of leaflets and bolls.	**22.03.2023 y. Planted, date, and monitoring days**								The number of formed bolls.%
	24.03. 2023	25.03 .202 3	26.03. 2023	27.03. 2023	28.03. 2023	29.03. 2023	30.03. 2023	31.03. 2023	
1 leaflets (100)	1	10	6	5	21	14	9	7	73
2 leaflets (100)	-	7	8	14	11	21	12	9	82
3 leaflets (100)	2	7	6	11	21	12	6	4	69
4 leaflets (100)	2	4	3	9	9	13	8	5	53
Moderate fertility.									69,2 %

The germination viability of cotton seeds under laboratory conditions was high, with germination percentages ranging from 69.2% in all variants.

The optimal sowing period was found to be the early days of spring (April), with germination percentages reaching 72% under those conditions.

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