



## TECHNOLOGY FOR GROWING CASSIA (CASSIA TORA L.) IN THE CONDITIONS OF KARAKALPAKSTAN

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### ANNOTATION

*The article discusses the features of the technology for growing cassia (Cassia tora L.) in the conditions of Karakalpakstan. Cassia is widely used in landscaping as an ornamental plant, and is used as a medicinal and insecticidal plant. The cassia plant grows well in light to moderately fertile soils. It is not recommended to sow in soils with insufficient moisture and poor aeration.*

**KEYWORD:** *plantation, thinning, seeds, cultivation, phosphorus, nitrogen, irrigated soil.*

Today, 112 species of medicinal plants are allowed to be used in medicine in Uzbekistan. About 80% of them are naturally growing plants, but in recent years large areas of artificial plantations have increasingly appeared. According to the World Health Organization, 60% of medicines used in modern medicine are prepared and produced from medicinal plant materials.

In recent years, consistent reforms have been implemented in the republic on the protection of medicinal plants, the rational use of natural resources, the construction of plantations for the cultivation of medicinal plants and their processing. In this regard, the Resolution of the President of the Republic of Uzbekistan dated April 10, 2020 No. PP-4670 "On measures for the protection, cultural cultivation, processing of wild medicinal plants and the rational use of available resources" was adopted.

Among medicinal plants, cassia (*Cassia tora* L.) is of great importance. Cassia is a genus of trees, shrubs, subshrubs or herbs of the legume family (Fabaceae).

Cassia reaches a height of up to 1 meter. It has pinnate leaves with 4-5 pairs of leaflets. The leaves are pointed, lanceolate. The flowers are yellow with wide marigold petals. The inflorescences are axillary racemes. The column is curved, thread-like. The fruits are cylindrical in shape and are wide cloisonne beans.

In the conditions of Karakalpakstan, the territory of the International Innovation Center of the Aral Sea region under the President of the Republic of Uzbekistan was chosen as the place of experiment. 50 m<sup>2</sup> of land was selected for sowing cassia seeds. Sowing was carried out in May. Having prepared the soil and watered once, on May 29, 200 seeds were sown in each row to a depth of 2-3 cm. The distance between the rows was 70 cm.

The weight of 1000 seeds were 25-35 g. The seeds began to germinate 12-15 days after sowing. As reported in the literature, once the seeds germinated, their growth was very slow. For cassia seeds to germinate, the air temperature must be 18-20°C. Seeds germinate 6-20 days after sowing.

Sprouted sprouts grow slowly. Plant budding is detected 2.5-3 months after germination. The growing season lasts until cold weather (-10°C). However, the leaves and fruits of the plant left in such cold conditions lose their quality.

The cassia plant grows well in light to moderately fertile soils. It is not recommended to sow in soils with insufficient moisture and poor aeration, since the root system is poorly maintained and quickly succumbs to root diseases.

Before sowing, the seeds of this plant are soaked in hot water (30°C) for 6-8 hours. Soaked seeds are considered suitable for sowing. After 30 minutes of mixing the soaked seeds with sand, the seed coat will be damaged. To do this, seeds mixed with sand are laid out on a flat table or floor and rolled out with a hard rag or tarpaulin mitten. Then it is soaked in hot water (30°C) for 8-10 hours, during which time the hot water is changed twice. Soaked seeds should be placed in 1/3 of the bag. After soaking the seeds, they are left in water for 2-3 days.

In the conditions of Karakalpakstan, planting cassia seeds begins in the second half of April, after the soil has warmed up well. Sowing period is from April 10-15 to May 5-10. The seeds were planted using a seeder, also using manual force. Before sowing, the seeds were dried. When sowing on a seeder (Goza seeder), 8 kg were consumed per hectare. Seeds were sown at a depth of 2-3 cm. Seed germination was 56-60%.

The row spacing is 60-70 cm in irrigated areas, 50-60 cm in non-irrigated areas. After planting, it is gradually watered.



Germination of seedlings begins after 5-6 days. If seedlings are delayed, it is watered again. After the leaves appear, the plant is thinned out, leaving 2-3 plants every 20-25 cm.

The second thinning begins after 10-15 days and every 40-50cm. leaves one plant at a time. During thinning, it also softens the soil to a depth of 8-12 cm. Fertilizes the soil twice with mineral additives. In the first feeding - at the beginning of sowing, 30 kg of nitrogen and 20 kg of phosphorus are added per hectare. During the second feeding, at the beginning of flowering, 20 kg of nitrogen and 30 kg of phosphorus are added per hectare. Cultivation is carried out at least 5 times.

An important factor in caring for cassia is pruning the runners, which is carried out before the start of the growing season in early spring. It is allowed to shorten the length of the stems by almost half.

Thus, according to the results of the study, it is recommended to plant cassia in the conditions of Karakalpakstan. It is recommended to be used in landscaping as an ornamental plant, and as a medicinal and insecticidal plant.

## LITERATURE

1. Ahmedov O., Ergashev A., Abzalov A., Yulchiyeva M., Mustafakulov D.. "Technology and ecology of growing medicinal plants" Publishing house "Tafakkur-bostoni" Tashkent-2018. 188-192 p
2. Berdiev E.T., Hakimova M.H, Makhmudova G.B. "Forest Medicinal Plants" Tashkent 2016.140-142 p
3. Berdiev E.T., Akhmedov E.T. "Natural medicinal plants" Tashkent-2017 131-133
4. Prator O., Shamsuvaliyeva L., Sulaymanov E. "Botany (Morphology, Anatomy, Systematics, Geobotany)" Educational Publishing House-Tashkent - 2010.
5. Jorayeva M.A. "Atlas of medicinal plants". Study guide. Tashkent "Noshir" 2019 p. 80-81
6. Mullajonova M.T. "Pharmacognosia". Tashkent-2017. 55 s
7. Kholmatov. H. X. Akhmedov O. A., Musayeva N. A. "Fundamentals of Pharmacognosy and Botany" "Teacher" publishing house creative house Tashkent-2017. 74-75 p.