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MORPHOLOGY, BIOLOGY, AND BRIEF CULTIVATION AGROTECHNIQUES OF THE NEW COTTON VARIETY ANDIJON-ZIYO-2

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Abstract

The article describes the morphological and biological characteristics of the new cotton variety “Andijon-Ziyo-2”, as well as its economically valuable traits and agronomic practices aimed at obtaining high and early yields. Sowing, irrigation, fertilization, and crop management practices are analyzed under production conditions.

Key words: cotton, fiber yield, fiber length, productivity, micronaire.

Increasing the varietal purity of medium-fiber cotton varieties resistant to salinity and water deficiency, as well as expanding their cultivation areas in production through the multiplication of high-generation seeds, is considered one of the urgent tasks today [1].

It should also be noted that seed quality depends not only on the position of the seed on the plant but also on the environmental conditions under which the mother plant grows and develops [2].

The variety was developed by breeders of the Andijan Institute of Agriculture and Agrotechnologies, including S. Abduraximov, A. Abduraximova, and others. It was created through hybridization and has been included in the State Register since 2025.

The research was conducted under the conditions of Andijan region at the experimental fields of the Andijan Institute of Agriculture and Agrotechnologies. The soils of the experimental fields consisted of irrigated meadow-gray soils with medium loamy texture and average fertility.

The climate is sharply continental, and during the vegetation period the air temperature and moisture levels are sufficiently variable for cotton growth.

The newly developed cotton variety “Andijon-Ziyo-2” was used as the research object. Phenological observations, biometric measurements, and yield determination methods were applied to study its morphological, biological, and economically valuable characteristics. Measurements were carried out according to current breeding and seed production methodological recommendations.

The plant of the Andijon-Ziyo-2 variety has a conical shape and a height of 110–115 cm. The stem is strong, resistant to lodging, and slightly pubescent. Branching belongs to type 1.5–2.0, with the first fruiting branch appearing at the 5th–6th node. The variety belongs to the medium-ripening group, with a vegetation period of 118–120 days. The leaves are medium-sized, 3–5 lobed, deeply cut, and slightly pubescent. The flowers are medium-sized with light yellow petals. The bolls are medium-sized, oval-shaped, with 4–5 locules and pointed tips. The weight of seed cotton per boll is 5.9–6.1 g. The seeds are fuzzy and gray-colored, with a weight of 110–115 g per 1000 seeds.

Fiber characteristics of the variety are as follows: white-colored fiber, fiber length 33.5–34.0 mm, fiber yield 37.0–38.0%, strength 4.5–4.6 gk, relative breaking length 27.8 gk/tex, micronaire 4.4–4.5, belonging to the IV industrial type.

It is advisable to cultivate the Andijon-Ziyo-2 variety on fertile soils. A planting pattern leaving one plant per hill is considered optimal.

The optimal sowing period is April 1–15 under conventional conditions and March 15–25 under plastic film. Depending on yearly climatic conditions, these dates may vary by 3–4 days earlier or later. The seed sowing depth does not differ from other varieties. In fields where pre-irrigation has been applied, seeds germinate rapidly and uniformly, ensuring healthy and vigorous growth. In fields with insufficient soil moisture for germination, irrigation after sowing is recommended to ensure complete seed emergence. In fields with uniform emergence, thinning is carried out when plants form 1–2 true leaves.

Depending on soil conditions, the recommended plant density varies. Specifically, in highly fertile soils, 90–100 thousand plants per hectare are recommended, while in low-fertility, stony, or foothill soils, 100–120 thousand plants per hectare are advised.

The first irrigation of the Andijon-Ziyo-2 cotton variety during the growing season is carried out depending on soil conditions and plant status. In fields with deep groundwater, irrigation is recommended when plants produce 6–7 true leaves or at the beginning of budding. In soils with shallow groundwater (waterlogged areas), irrigation is carried out during the mass budding stage. Subsequent irrigations are performed according to plant water demand. Excessive irrigation or overwatering negatively affects this variety.

The annual mineral fertilizer rates for this variety are recommended as follows: nitrogen — 200–250 kg/ha, phosphorus — 140–175 kg/ha, potassium — 100–125 kg/ha, with a ratio of 1:0.7:0.5. The depth, width, and frequency of inter-row cultivation in fields planted with this variety correspond to current agronomic recommendations.

Topping of the Andijon-Ziyo-2 variety is performed considering plant density in the field. When the plant density is 90–100 thousand plants per hectare, topping is recommended after the formation of 13–14 fruiting branches; when the density is 100–120 thousand plants, topping is carried out after 12–13 fruiting branches appear.

Measures against weeds, pests, and diseases, as well as defoliation practices, do not differ from those used for other cotton varieties and are implemented according to established recommendations.

When cultivated under high agricultural technology and managed according to scientific recommendations, the Andijon-Ziyo-2 cotton variety can produce 40–45 centners per hectare of high-quality and early-maturing cotton yield.

The Andijon-Ziyo-2 cotton variety ensures stable productivity and high-quality fiber characteristics when cultivated under intensive agronomic conditions. The variety is medium-ripening, has a relatively short vegetation period, and provides the opportunity for early harvesting. Through proper irrigation, fertilization, and optimal plant density management, it is possible to obtain 40–45 centners per hectare of high-quality cotton. This variety is considered promising for production conditions and is distinguished by its adaptability to different soil and climatic environments.

References

1. J. Kh. Akhmedov et al. Proceedings of the International Scientific and Practical Conference on “Current Problems and Development Prospects of Genetics, Breeding, Seed Production and Cultivation Agrotechnologies of Agricultural Crops”. – Tashkent, 2018 (December 18–19). – pp. 114–116.

2. Amanturdiev, Sh. Namazov, B. Niyatov. “Formation of Fiber Yield and Fiber Length Traits in Newly Developed Cotton Lines” // Agro Ilm Journal. – Tashkent, No. 4(60). – 2019. – p. 10.