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HEMP (HIBISCUS CANNABINUS L.) CULTIVATION, FACTORS AFFECTING SOWING TIME AND FIBER QUALITY

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Abstract. The article summarizes the results of recent research on the botanical and morphological characteristics of the valuable fiber crop - hemp (Hibiscus cannabinus L.), as well as the agrotechnology of cultivation. Based on field experiments conducted in the conditions of Surkhandarya region on early ripening varieties 21-42 and 34-1, the optimal sowing date (March 30) was determined, as well as the interaction of agroecological and biological factors in increasing fiber quality and the proposed fiber quality index (W) were analyzed. Practical recommendations for the development of hemp in the southern regions are given.

Keywords: hemp, Hibiscus cannabinus L., hemp fiber, planting date, fiber quality index, agroecological factors.

Subject relevance . Our Republic President by on January 5, 2023 hemp sowable fields expansion and this about scientific research strengthen necessity emphasized was [2; 3]. Hemp - Malvaceae to the family belonging one annual plant , 30 percent of the stem oil fiber , fiber himself/herself and stem 24 percent of its weight organization [2 ; 3]. Fiber solid and hygroscopic mold , textile , sack , electric cable , furniture , paper and hydrolysis in the industry , seed and oil and cage in receiving used [2; 3; 5]. World according to hemp ~300,000 hectares planted , average Yield 120–140 c/ ha what organization [5]. In Uzbekistan hemp from 1939 Tashkent in the province industry on a scale cultivated (22 thousand in the 80s) ha , 350 thousand tons more than raw material) [1]; currently 4 varieties state to the registry included [2; 3]. However of the country the most southern region — Surkhandarya hot-dry climate conditions (from +50°C in summer) high temperature) of the canopy planting deadline unexplored was , that's it the gap filling for the purpose Termez state engineering and agrotechnology university scientists by field experiences conducted [1; 6].

Botanical-morphological features and agrotechnology . Hemp arrow rooted , stem 2–5 m (some up to 3–4 m in the data) growing , anthocyanin colored plant . Leaves in order , the ones above lanceolate ; flower large (diameter 7 cm +), 5- petaled , yellow-pink in color . From himself pollinated , one 15–20 pieces in a basket Seeds ripen , 1000 pieces seed weight 20–28 g [2; 3] — this Surkhandarya in experience record done with values (12–18 pieces , 20.4–24.1 g) suitable [1]. It is thermophilic (+23…+25°C is optimal, dies at -1… -1.5 °C will be) and short daily plant ; soil humidity To ChDNS relatively 75–80 percent less not to be need this because of only irrigated on the ground is planted . Technical maturity 110–130, biological Maturity in 130–150 days observed [2; 3], this In Surkhandarya 138–148 days old action to the period close [1].

Earth 28–30 cm in autumn in depth plowed , seed 4–6 cm to depth , rows between 60–70 cm as [1; 6]. In the first 30–45 days plant very slowly growing , mainly root system develops — that in the period stranger to the grass against struggle important [5]. Blue stem for N250-P150-K120 kg per hectare , seed for N200 -P100-K100 kg fertilization recommendation is harvested ; 44–45 percent of the harvest namely mineral fertilizers on account of [5]. Irrigation is carried out 6–10 times depending on the depth of groundwater [1; 5].

The traditional recommended period for Tashkent region is the 1st–2nd decade of April [1]. In the hot and dry conditions of Surkhandarya, early maturing varieties 21-42 and 34-1 were comparatively sown on March 20 (control), March 30, and April 10 (N200-P150-K100 kg/ha, 6 irrigations) [1].

The variants sown on March 30 had the highest seed germination, fiber yield (21.3–24.0%) and fiber breaking weight (23.0–23.6g/s) also had the best indicators. On this basis, the optimal planting date for early-maturing varieties for Surkhandarya conditions was recommended as March 30 [1] — this is earlier than in the central regions, allowing the critical budding phase of the plant to be shifted from the hottest month of summer (July).

Because chemical treatment poses environmental risks and water pollution, recent studies have investigated the combined effects of agroecological (planting density 20×10–45×15 cm, harvest period 90–110 days, soil type, fertilization, climate) and biological (water, soil, or chemical coagulation using microorganisms) factors on fiber quality [6]. Early harvesting and optimal density increase the lignin content in the stem — the more lignin, the more difficult it is to separate the fiber, but the stronger the stem. Of the coagulation methods, water coagulation gives the shortest results (7 days, 25–30°C), reduces water pollution by 40–60% compared to chemical treatment (14 days), and better preserves the natural color of the fiber [6].

According to the results, the fiber with longer and stronger, thinner and lower color coefficient has the highest quality index (W≈4000). Under optimal agroecological conditions, although lignin is relatively low, the strength is 15–25% higher, which indicates that the combined consideration of biological and agroecological factors allows obtaining high-quality, environmentally friendly fiber [6].

The two research areas considered — sowing date and factors affecting fiber quality — are inextricably linked: the optimal growth rate achieved through sowing date can be converted into high-quality fiber by choosing the right harvest date and spinning method [1; 6]. However, the results obtained are currently based on a limited number of field and laboratory tests, and their repeated verification in different soil-climatic regions and with other varieties, as well as testing the fiber quality index (W) formula on a larger database, should be a priority area of future research.

Conclusion . Hemp — textiles , paper , chemistry and food industry for valuable raw material giver strategic crop is , its agrotechnology every one region for separately working exit necessary . Uzbekistan northern — Khorezm province under the circumstances varieties for the most acceptable planting duration , seed germination , fiber output and interruption weight according to analyses not held . This basically Khorezm local to the conditions adaptation and bioecological features to study before us goal as We put it .

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