

## AGROTECHNOLOGY OF HIGH-YIELD AND HIGH-QUALITY FIBER CULTIVATION OF FINE-FIBER COTTON VARIETY “SURKHAN-16”

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### ABSTRACT

The new fine-grained cotton variety “Surkhan-16” was selected from the hybrid combination (9871-I x Karshi-6) x (T-5689 x Surkhan-6) at the Uzbek Research Institute of Cotton breeding, seed production and agrotechnology. Authors of the variety: M.Iksanov, B.Ch.Juraev and others

This variety has undergone extensive production testing since 2006 in the state varietal testing industries. Elite seeds of new cotton varieties are being propagated in the “Surkhan experimental plot”.

### **Morphology of the variety, valuable traits and characteristics for the farm**

The getting harvest from the yield of fine-fiber cotton variety “Surkhan-16” is limited. The height of the head stem is 110-120 cm. The stem is blue, at the end of the growing season the stem turns red. The upper part of the stem is covered with noticeable feathers. The leaves are green, medium size.

The flowers are large, yellow, with anthocyanin spots at the base of the petals. The cocoons are medium, round, ovoid in shape, the cocoons are slightly triangular.

The fiber is white and does not spill out of the cotton ball. The seeds are of medium size, with small bluish hairs on the micropile and aunt. The growing period is 115-120 days. The first harvest horn is located at the 3-4th joint.

The weight of the cotton in the bag is 3.2-3.4 grams, the number of bowls is 3-4.

Fiber length (1 width) -1.37 inches, light reflection coefficient (Rd) -78-79 percent, the yellowness rate (+ b) is 9.2%. Another advantage of the Surkhan-16 variety is that it differs from other varieties by the whiteness of its fibers. The fiber meets type 1 “A” based on the regulatory requirements of the textile industry (UzDSt 604: 2001). The fiber of the variety is white, meets the requirements of the world market in terms of color and quality.

According to data obtained by the State Variety Testing Commission in 2007, this variety is - 49.0 ts/hect in Denau state varietal testing plot, -39.4 ts/hect in Karshi plot, -46.8 ts/hect in Termez state varietal testing plot, in 2008 in Termez, Denau and Karshi state varietal testing plots yielded -38.4-39.6 ts/hect. The Surkhan experimental farm was planted in 2012 and yielded 35.2 ts/hect, in 2013, 5 hectares were planted and harvested 37.1 ts/hect, in 2017-2018, 38-39 ts/hect were harvested in the areas planted under production conditions. In 2018, in the Surkhandarya

region, the fine-fiber cotton Iolatan-14.A1, imported from the Republic of Turkmenistan and planted on 235 hectares, yielded 2.8 quintals per hectare more than navigation.

In 2019, 1468 hectares were planted in Angor and Jarkurgan districts of the region, with an average yield of 33 ts /hec, this is 4.5 ts /hec more than the Iolatan-14.A1 navigator. The Zang area of the Angor Surkhan Gururi cluster was planted on 42.6 hectares to 33.6 t /hec, and the Navshahar area was planted on 745 hectares and yielded 34.7 t /hec.

The Navshahar area in Angor district is planted on 86 hectares in the Jumaev Rustam field of the Angor Surkhan Gururi cluster. The state plan was fulfilled in October with a yield of 38 quintals per hectare. In 2020, 380 hectares were planted in the districts of Surkhandarya region, including 190 hectares in Jarkurgan district, 35 ts/hectare per hectare. It was planted in “Angor Surkhan Gururi cluster” LLC in Angor district and yielded 39-40 ts/hectare.

This variety belongs to type 1 “A” and provides high quality fiber. According to the Sifat Fiber Certification Center, Fiber of “Surkhan-16” variety has the following indicators: micronaire (mic) index -3.1-3.7; specific tensile strength (str) -35.9 g / s / tex;

### SOWING THE COTTON SEEDS

It is advisable to sow the seeds in a 10 cm layer of soil when the temperature reaches 14–15°C. First hairy, then semi-hairy, then hairless seeds are planted. Due to the significant increase in soil density over the past 30 years in the conditions of the southern carbonate heavy soils of Surkhandarya region, since in some places it is 1.3-1.5 g/s<sup>3</sup>, hairless seeds are sown when the soil temperature rises to 18-20 ° C, a healthy energetic flat seedlings are obtained. This has been proven in several years of manufacturing experience.

It is important to plant the seeds first in a soil that heats up quickly, with a light mechanical composition, and then in heavy soils. Early, complete and tillage of seeds is one of the most important agro-technical measures.

When sowing seeds in the nest, 40-45 kg of seeds per hectare are used. In general, seedling thickness varies depending on soil type, fertility, planting scheme, seed consumption.

When sowing seeds of cotton variety “Surkhan-16” in the scheme 60x30, it is possible to leave the seedlings in a checkerboard pattern and leave 150-160 thousand seedlings per hectare, yielding 50-60 ts/hectare. This variety was sown in 2019 on 200 hectares of land and got good results.

In order to get the sown seeds quickly and evenly, it is necessary to pay special attention to the depth of sowing, if seeds are planted at depths above the norm or shallow, the seeds will not germinate well in these areas.

The optimum sowing depth of cotton seeds “Surkhan-16” is 4.5-5.5 cm, depending on the type of soil and moisture and sowing time. The seedlings of all fine-fiber cotton varieties are likely to be affected by gammosis until they produce 2-3 leaves in the seedlings as a result of prolonged rains during their youth. Therefore, in the early stages, as soon as 60-70 percent of the seeds germinate and emerge to the surface, shallow, gentle soft cultivation gives good results. In this case, it is advisable to install a disk for cultivation.

### UNIFICATION OF COTTOP SAPLINGS

One of the measures that is important in cotton agrotechnics is to start cotton seedlings when 1-2 leaves appear on the plant. Delayed spinning will lead to the growth and development of seedlings and further decline in cotton yield and fiber quality. In particular, as a result of late weeding, the roots of cotton seedlings stick together and as a result, when the excess cotton seedlings are removed, the roots of the remaining seedlings are damaged. Due to the limited number of branches in the Surkhan-16 variety, seedlings can be left in the 60x10-1-2 scheme at 135-140 thousand bushes per hectare. When the width between rows is 90 cm, it is recommended to care for seedlings in the scheme 90x10-1-2, leaving 145-150 thousand bushes.

### APPLICATION OF MINERAL FERTILIZERS

Soil is the main source of nutrients for the plant. Therefore, the amount of nitrogen, phosphorus and potassium in it varies depending on the species. Feeding with cotton mineral fertilizers is determined depending on the relative fertility of the soil and the planned cotton yield. For fine-grained variety "Surkhan-16" pure nitrogen is defined as 250 kg / hec, phosphorus-150 kg/hec and potassium-80-100 kg / hec. It is recommended to add nitrogen to the cotton in two periods; first fertilization: 100 kg/hec during mowing; 150 kg/hec at the beginning of the second fertilization mass flowering and budding period, 70% of the annual rate of phosphorus fertilizer under autumn plowing, the remaining 30 per cent with planting and during the flowering period of cotton, it is advisable to apply 50 per cent of the potassium fertilizer under the autumn plow and the remaining 50 per cent during the mowing season. The last feeding of cotton with mineral fertilizers should be completed no later than July 1-5. Қўшқатор қилиб экилганда эса 20-25 июнда яқунлаш мақсадга мувофиқ.

If the ratio of mineral fertilizers or feeding times applied to cotton is violated, or if phosphorus and potassium fertilizers are not applied in sufficient quantities, if nitrogen fertilizers are used in excess, the opening of the pods is delayed by 10-15 days, fiber quality as well as seed weight are reduced, resulting in delayed maturation and more damage to cotton in the autumn black sap.

### IRRIGATION SCHEDULE

Depending on the developmental stages of the plant, irrigation procedures are recommended in practice three periods: 1st period. before flowering; Phase 2. flowering - harvesting; Phase 3, ripening; During this period, the number and scheme of irrigation for cotton variety "Surkhan-16" is recommended to irrigate in the order 2-2-1. Irrigation of cotton, especially during the flowering period, leads to roughness of the fiber and a decrease in fiber length, a decrease in fiber consumption. At the same time one of the characteristic features of these varieties is the need to water the cotton flower without raising it. Otherwise, due to the strong woodiness in the cotton, the main stem will not grow, which leads to the small size of the pods and relatively low yields.

### TERMS OF CHEMICAL SPRAYING

According to our many years of experience, in the variety “Surkhan-16” when planted individually in schemes of 60 cm, 76 cm, 90 cm, when 18-19 crop joints appear on cotton stalks, with the help of hand, at the appearance of 16–17 harvested horns, the pixel content is 1.5 liters per hectare, 14-15 crop joints when planted in pairs, manually or when 13–14 crop joints appear, it is advisable to carry out chemical spraying of cotton with 1.5 liters of pixel material per hectare.

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