World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 32, March 2024
ISSN: 2749-361X

CULTIVATION OF TECHNICAL CANNABIS IN UZBEKISTAN

Kim V.V., PhD agricultural science
Astrakhan state technical university. Tashkent region. Uzbekistan
Hotamov M.M., PhD biological science
Institute of Genetics and Plant Experimental Biology. Tashkent region. Uzbekistan
Gaybullaev G.S. DcS agricultural science
Samarkand Institute of Agroinnovation and Science. Samarkand. Uzbekistan.

Article history:

Received: 30th December 2023
Accepted: 24th February 2024

Abstract:

This article described that for the first time research was carried out on the culture of industrial hemp in the soil and climatic conditions of the Khavast district of the Syrdarya region, where 5 varieties were studied, which, with sufficient irrigation and compliance with agricultural technology of cultivation, are quite possible to successfully cultivate. Breeding work was carried out by the method of individual selection of industrial hemp plants with the necessary improved characteristics for further research in order to create new local varieties for our Republic.

Keywords: *technical cannabis, varieties, plants, seeds, soil.*

INTRODUCTION

An important condition for the cultivation of technical knabis is the content of tetrahydrocannabinol in the stems, leaves and cones in an amount of less than 0,1%.

The cultivation of industrial hemp yields a harvest in the form of seeds and tops. Hemp oil is pressed from the raw seeds. It comes out with a greenish tint of light or dark tone.

To date, on the basis of this Law, the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 770 dated December 7, 2020 "On measures to streamline the activities of the use and cultivation of the cannabis plant for industrial purposes not related to the production or manufacture of narcotic drugs and psychotropic substances" has been developed.

According to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated June 18, 2019 "On measures to create an agro-industrial cluster in the Syrdarya region", RS Success Agro LLC, owned by the Emirati company Industrial Innovation Group LLC, was established [8].

For the first time in 2022, five foreign varieties of industrial cannabis were planted in the collection nursery under the state project "Selection and creation of new varieties of industrial hemp for cultivation in the soil and climatic conditions of the Republic".

Hemp belongs to the family Cannabinaceaea (hemp) to the family Cannabis sativa L. Hemp is an annual bast fibrous plant cultivated for fiber and seeds.

Industrial cannabis does not have any psychotropic effects, unlike subtypes of narcotic marijuana. Industrial varieties contain less than 0.1% tetrahydrocannabinol, which causes a psychotropic effect [7].

Technical cannabis is considered among cotton substitutes and synthetic materials, not only in the textile industry, but also in the automobile, aircraft and shipbuilding, medical, space, defense, pulp and paper, construction and sports industries [1].

Common cannabis is an annual plant. In terms of morphological features, the root, stem, leaves, flowers, and fruit of dicotyledonous hemp are similar to monocotyledonous hemp. The inflorescence of monoecious cannabis depends on the sexual type:

- masculinized - loose panicle inflorescence;

-ideal monoecious plant - inflorescence seed head;

- monoecious plant with a predominance of male flowers over female ones; - inflorescence, seed head;

- monoecious feminized poskon - inflorescence, seed head;

- regular materka, -inflorescence, seed head.

The plant active absorbs greenhouse gas, according to experts, 1 hectare of hemp can replace 4 hectares of forest. Hemp fiber is a durable plant fiber, from which, in addition to hemp, ropes, coarse linen, high-quality clothing, shoes, and underwear are made. The wear resistance of such clothes and footwear is quite high [5].

Technical cannabis is divided into 3 types: Northern, Central Russian and Southern. Central Russian hemp plants are about 1,25-2,0 m tall, the leaves are medium-sized, with the number of shares from 5 to 9. The vegetation period is 80-120 days. Seeds are light gray; Weight of 1000 seeds 13-18g. [3].

The leaf of cannabis consists of a petiole and a lamina. According to the nature of the outline of the leaf blade, most cannabis leaves belong to compound

World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 32, March 2024
ISSN: 2749-361X

leaves. The number of lobes and the size of the leaf plates are, to some extent, varietal characteristics. The most developed leaves of Central Russian varieties are 9-11, and sometimes 13 lobes. The color of the leaves varies from light to intense green, depending on the variety and growing conditions. The specific gravity of the stem is 60-65% of the total dry weight of the plant. The remaining 30-45% are roots, leaves, and seeds. This ratio is approximate and depends on different growing conditions. At a young age, the hemp stem is soft, juicy, herbaceous, covered with glandular hairs, with age it becomes woody, changes its shape, which from the base to the middle turns from rounded to hexagonal, and to the top to tetrahedral. The length of the hemp stem and its diameter within the same variety vary greatly depending on the growing conditions and the direction of the crop.

The technical cannabis stem is a complex complex of tissues, differentiated by position in the stem, structure, and functionally it consists of epidermis, collenchyma, bark parenchyma, primary bast fibers, bast parenchyma, conductive tissue, cambium, wood, and pith [2].

The root system of cannabis consists of the main taproot and lateral roots. From the main root come the roots of the first and second order. The main root penetrates the soil to a depth of 2 m or more, and the lateral roots of the first order - up to 80 cm. Compared to the above-ground mass, the root system of hemp is poorly developed, which is one of the reasons for the high requirements of hemp to soil fertility [6].

The male flower consists of a pedicel, a five-leaved yellow-green perianth, and five stamens with long anthers attached to thin filaments. The female flowers, as well as the male ones, are located at the base of the branches that emerge from the axil of the leaves. The female flower is surrounded by a cover-like bract, from which only the pistil columns stand out. The pistil consists of two thin colorless stigmas fused at the base, and a single-nested ovary formed from two carpels, in the middle of which the ovule is placed. The female flowers of cannabis are small; The beginning of their flowering is determined by the emergence of stigmas by 1-2 mm of carpel to the outside.

The inflorescence of the posconi is small loose racemes on the side branches and on the top of the stem. The inflorescence is the seed heads located in the axils of the leaves [4].

RESEARCH METHODOLOGY

Experiments on the selection of industrial hemp sorots were laid in the Syrdarya region of the Havast district in 2022. 5 varieties were planted in the collection nursery: Ferimon, Santhica, Felina, Fedora, Rodnik. Before sowing industrial hemp seeds, an agrochemical analysis of the soil was taken. The sowing date is April 12, the repetition is 4 times, the area of the accounting plot is 28 m2, with underground drip irrigation (at a depth of 20 cm, irrigation pipes pass, where water is supplied to the roots of plants under the pressure of pumps).

Observations, field and laboratory records and measurements were carried out in accordance with the "Methodological Guidelines for cannabis Breeding and Production Verification of Completed Research Work" and "Methodological Guidelines for Conducting Field and Vegetation Experiments with cannabis" (VNIILK, 1980).

RESEARCH RESULTS

The main goal of our research is the selection and creation of new varieties of technical cannabis suitable for cultivation in Uzbekistan for the production of seeds, oil and fiber, processing of agricultural raw materials and the production of competitive, exportable products.

Soil analyses carried out in the educational and scientific laboratory of Tashkent State Agrarian University together with the laboratory of SAG AGRO MCHJ showed that the soils are poorly structured with a large number of dust particles. After watering, a fairly dense crust is formed, which then cracks. The arable layer contains humus 0.46 – 0.67 %, gross nitrogen 0,1330 – 0,1535 %, gross phosphorus 0.220 – 0.276 % and gross potassium 1,75 – 2,20 %, and in the subarable horizon their content is slightly lower (Table 1).

Table 1.
Agrochemical analysis of the soil of the experimental site before sowing industrial hemp varieties

Horizon, sm	Humus, %	Content gloss forms,%			Content of mobile forms, mg/kg			
		N	P	K	$N\text{-}NH_4$	$N\text{-}NO_3$	P_2O_5	K_2O
0-15	0,67	0,1535	0,276	2,20	13,5	10,9	5,41	145

World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 32, March 2024
ISSN: 2749-361X

15-30	0,46	0,1330	0,220	1,75	12,4	8,2	11,7	98

Phenological observations of industrial hemp varieties are presented in Diagram 2.

As can be seen from Figure 1, the earliest mass shoots were observed in the Ferimon variety. The same variety stood out for flowering, seed setting and earlier technical ripeness of seeds. Later seed ripening was observed in Rodnik and Felina cultivars (102 and 104 days after mass germination).

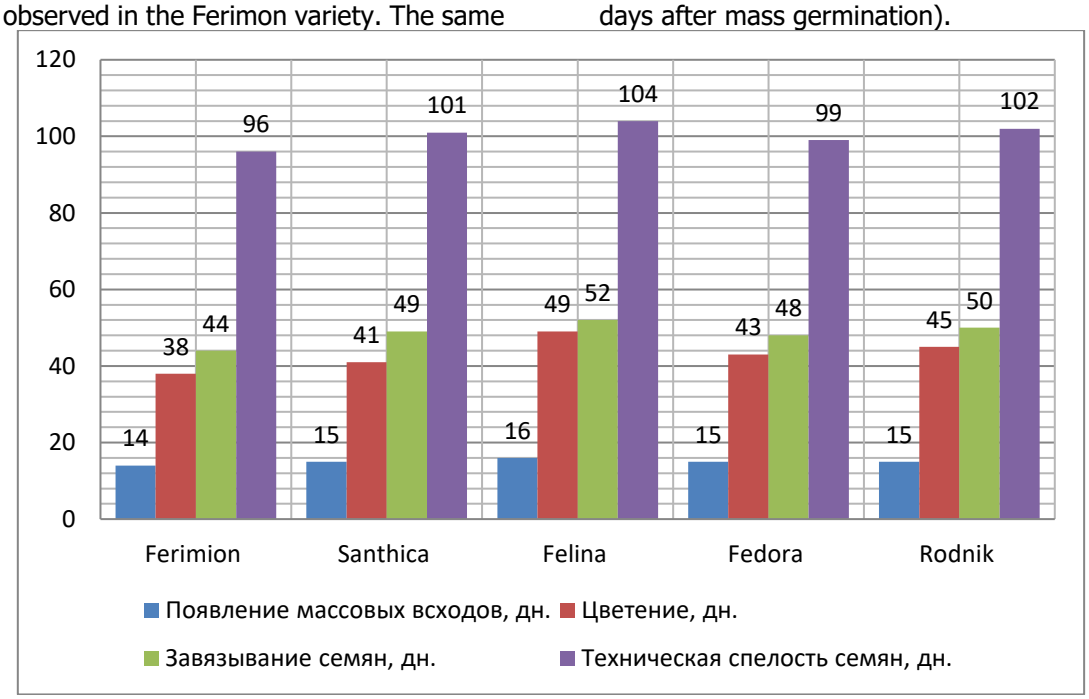
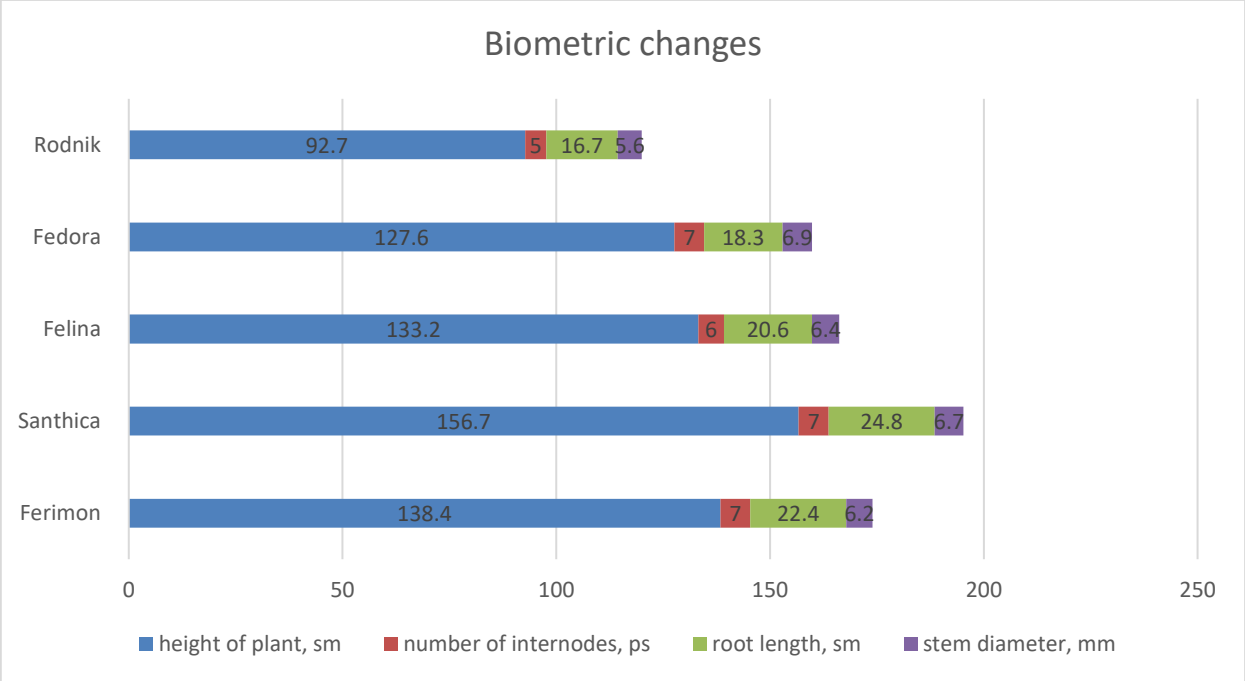


Figure - 1. Phenological observations of industrial hemp varieties for 2022-2023

The results of biometric measurements of industrial hemp varieties are presented in Figure 2.

World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 32, March 2024
ISSN: 2749-361X



	Height of plant, sm	Number of internodes, pcs	Root length, sm	Sem diameter, mm
Σ	648,6	32	102,8	31,8
X	129,7	6,4	20,6	6,4

Figure - 2. Biometric measurements of industrial hemp varieties for the 90th from mass sprouts in 2022-2023

As can be seen from Figure 2, biometric measurements were carried out on the 90th day after mass germination, which showed that the highest plant height and number of internodes were observed in the Santhica variety - 138.4 cm and 7 pcs., and the smallest in the Rodnik variety - 92.7 cm and 5 pcs, respectively.

CONCLUSIONS

Based on our research, the following conclusions can be drawn:

For the first time, research was carried out on the culture of technical cannabis in the soil and climatic conditions of the Syrdarya region, where 5 varieties were studied, which, with sufficient irrigation and compliance with the cultivation technology, are quite possible to be successfully cultivated.

Agrochemical analysis of the soil showed an increased salt content and a low humus content, which must be replenished by applying mineral fertilizers during the growing season of plants.

Breeding work was carried out by the method of individual selection of technical cannabis plants with the necessary improved characteristics for further research in order to create new local varieties for our Republic.

REFERENCES

1. Anikienko E. Tekhnicheskie konoplya: osobennosti proizvodstva i perspektivy pererabotki [Technical hemp: features of production and prospects of processing]. Svetich News Agency. Nivy Rossii Magazine, No. 7 (162), August 2018.
2. Gorshkov P. A. Biologicheskie osobennosti konopli [Biological features of cannabis]. Ed. by Senchenko G. I., Arinshtein A. I. and Timonin M. A. M.: Selkhoziz-dat, 1963, pp. 37-58.
3. Dimitriev V.L., Shashkarov L.G., Lozhkin A.G. Ob usovershenstvovaniya elementov tekhnologii otdel'zovanii beznarkoticheskikh sortov konopli v usloviyakh lesostepnoy zony Chuvashskoy Respubliki [On improving the elements of technology for

World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 32, March 2024
ISSN: 2749-361X

cultivating drug-free varieties of cannabis in the conditions of the forest-steppe zone of the Chuvash Republic]. 2019. № 4 (52). P. 20-23.
4. Magitt, M. Osnovy tekhnicheskikh anatomy lubyanykh kul'tury [Fundamentals of technical anatomy of bast cultures].
5. Romanenko A.A., Skripnikov S.G., Sukhorada T.I. Konoplya [Konoplya]. Past. Present. Future? Achievements of science and technology of the agro-industrial complex. 2016. T. 30. № 3. P. 39-41.
6. Senchenko G.I., Arinshtein A.I., Timonina M.A. Konoplya. Moscow, Selkhozizdat Publ., 1963. - 463 p. (in Russian).
7. Serkov V.A., Smirnov A.A., Bakulova I.V., et al. Cultivation of monodomous hemp sowing the middle Russian ecotype: practical recommendations. Penza, 2018. 37 p. (in Russian).
8. E-mail: info@uzcanna.com.