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Research Article

EFFECT OF FOLIAR FEEDING OF POTASSIUM FERTILIZER ON THE NUMBER OF STEM AND STORAGE RATE OF HEMP VARIETY "UZBEK-2268"

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ABSTRACT

In this article, the effect of foliar feeding of potassium fertilizer on the background of mineral fertilizers on the number of stems and the level of preservation of hemp variety "Uzbek-2268" has been proven. Against the background of mineral fertilizers in the experiment, potassium mineral fertilizer was applied to the level of preservation of the number of stems at the end of the vegetation period in the variant given at 48 kg/ha in the phases of 2-3 true leaves of the hemp plant, budding-flowering and flowering-fruiting, it was found that it was 171.2 thousand bushes/ha, showing a high result compared to the options.

KEYWORDS

Hemp, feed, background, foliar, bud, typical, 2-3 true leaves.

INTRODUCTION

Hemp (Hemp) is an annual plant, fibrous crop belonging to the Malvaceae family, Hibiscus Cannabinus genus and species. Hemp is found wild in South Africa. Homeland is India and South Africa. Hemp is mostly grown in countries such as India, Iran, China, EU and Africa. In 1915-1916, hemp was planted as an experiment at the North Caucasus and Turkestan variety testing station. It has been cultivated in Uzbekistan since 1927. But nowadays it is planted in very few areas (about 10 ha) [2]. Hemp stalks produce 17-18% weaveable fiber. Hemp fiber is colorless, clear, but coarse. This fiber is used to make sacks, ropes, tarpaulins, home furnishings, twine and other items. Hemp seeds contain 18-20% oil. It is used in the oil, varnish and paint industry, and in the preparation of soap. Used as lamp oil in India. Hemp is found wild in

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South Africa. Its homeland is India and South Africa. Hemp is mostly grown in India, Iran, China, Java and Sumatra islands, Africa, America (USA, Brazil, Cuba, etc.). In 1915-1916, hemp was planted as an experiment at the North Caucasus and Turkestan experimental station. It has been cultivated in Uzbekistan since 1927. Currently, hemp is grown in Uzbekistan (on a very small area), Kyrgyzstan, and the North Caucasus. On average, hemp gives 100-120 cm of stems and 4-5 cm of seeds from one hectare of land. But as a result of using high agrotechnics, 150-180 cm of green mass, 8-9 cm of seeds can be obtained from hemp [1; 368-370-p], [4; 368-370-p].

When harvesting 100 s of stalks per hectare, 120-150 kg of nitrogen, 60-80 kg of phosphorus, 120-160 kg of potassium are taken from the soil during the growing season. Therefore, along with mineral fertilizers, organic fertilizers should be applied to the hemp crop. Organic fertilizer should be applied at the rate of 10-15 tons per hectare during autumn plowing. Fertilizer application rate varies depending on soil fertility and planned yield. On average, 90-150 kg of nitrogen, 90-150 kg of phosphorus and 50-70 kg of potassium fertilizers should be given to the hemp crop [3; 370-371-p].

According to A.Idowu and other scientists, in recent years in the United States of America, experiments to evaluate the effect of hemp on the production of cannabinoids have been conducted in greenhouses. While hemp grown for fiber and seed has optimal fertilization requirements, hemp grown for cannabinoids requires more nitrogen fertilization to achieve maximum yield. From the established equations, the optimal nitrogen application recommendation required for maximum CBD yield was between 130 kg/ha and 250 kg/ha. These results can be applied to field cultivation of CBD hemp for similar fertilizers and cultivars, although results may vary by location [5; 1-10-p], [6; 363-367-p], [7; 26-29-p], [8; 517-524-p].

METHODS

It was held in the fields of experimental scientific research and educational experimental farm of Tashkent State Agrarian University. The soil of the experimental field is a typical gray soil that has been irrigated since ancient times. These soils are compacted according to their agrophysical properties, the volume weight is 1.22-1.38 g/cm3, the specific gravity in the arable layer is 2.59-2.61 g/cm3, in the lower layers it is 2.67- 2.72 g/cm3, soil porosity is 40-46%. Depending on the mechanical composition, the arable humus layer (0-25 cm) is medium sand, the mechanical composition of the soil in the sub-arable layer (25-50 cm) and lower layers (50-100 cm) becomes heavier, heavy sand and light It consists of loamy soil, with a lot of heavy fractional minerals up to 2-10%, rich in total phosphorus and the amount of 0.15-0.30%, high total potassium content of 2.1-3.0%, physical clay amount is 47-52%.

In 2023, in our preliminary experiments, the effect of potassium fertilizers on the growth, development and productivity of hemp plants was studied. "Uzbek-2268" variety of hemp was taken for the experiment. In this case, the variety was planted on April 21, in 1 scheme, that is, in schemes of 70 cm between rows. The number of options is 6, the number of returns is 4, the number of patches is 24. The surface of each plot was 28 m2, the calculated area was 14 m2, and the number of calculated plants was 20.

RESULTS AND DISCUSSION

It affects the plant's supply of light, food and water. The growth and development of crops, as well as the

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formation of the crop, are inextricably linked to the number of plants. As a result of the research carried out in 2023, the number of bushes planted in the control without fertilizers at the beginning of the application period amounted to 158 thousand pieces/ha and made 79.10%. The number of plants planted in the background variant was 168,000/piece, which was 84,0%. Against the background of mineral fertilizers, the number of plant stems was 168.6-171.2 thousand pieces/ha in the variants fed with potassium fertilizer in different rates.

At the end of the implementation period, the number of bushes in the control option was 150.3 thousand bushes/ha and reached 95%. The results of the basic number of fertilizers were 97.8% and had an indicator of 164.3 thousand bushes/ha. The indicators of foliar application against the background of mineral fertilizers were 98.4% with 165.9 thousand bushes/ha, 98.8% with 167.8 thousand bushes/ha, 168.5 thousand bushes/ha 99,0% and 169,800 bushes number showed 99,2% results.

Table 1

Effect of fertilizer rates on hemp plant number and retention rate, average (2023)

No	Fertilizer norms	Number of bushes at the beginning of the vegetation period		Number of bushes at the end of the vegetation period	
		a thousand pieces / ha	%	a thousand pieces / ha	%
1	Without fertilizer (control)	158.0	79.0	150.3	95.1
2	Background-$N_{200}P_{100}K_{80}$	168.0	84.0	164.3	97.8
3	Background+K_{36} (foliar application)	168.6	84.3	165.9	98.4
4	Background+K_{48} (foliar application)	171.2	85.6	169.8	99.2
5	Background+K_{60} (foliar application)	170.2	85.1	168.5	99.0
6	Background+K_{75} (foliar application)	169.8	84.9	167.8	98.8

When we compare the two periods, the number of bushes that have germinated at the beginning of the period is 10,000 pieces/ha in the ratio of the background option to the control option, and the option given as a foliar of potassium fertilizer in the amount of 36 kg/ha in the background of mineral fertilizers. 10.6 thousand bushes per ha compared to the option without fertilizer, and 13.2 thousand bushes

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per ha in the option with 48 kg of potassium fertilizer in the background, potassium mineral fertilizer in the background of mineral fertilizers It increased by 12,200 bushes/ha in the case of 60 kg/ha of iron, and 11,800 bushes/ha when 75 kg/ha of potassium fertilizer was applied as a leaf foliar. Against the background of mineral fertilizers, the ratio of foliar application to the background variant increased by 0.6 thousand bushes/ha, 3.2 thousand bushes/ha, 12.2 thousand bushes/ha and 11.8 thousand bushes/ha.

The control indicators at the end of the application period were 14,000 pieces compared to the control without fertilizer. 15.6 thousand bushes/ha when fed with 36 kg/ha of leaves with potash fertilizer in comparison to the no-fertilizer option, and 19.5 thousand bushes/ha, and 18.2 thousand bushes/ha when 60 kg/ha of potassium mineral fertilizer is given to beryl together with the background, this indicator is 75 kg/ha with the same fertilizer as a background when the amount of foliar was given, it increased to 17.5 thousand pieces/ha bush. 1.6 thousand bushes/ha when foliar feeding with potassium mineral fertilizer in the amount of 36 kg/ha, 5.5 thousand bushes/ha in the case of 48 kg/ha of potassium fertilizer in the background of mineral fertilizers 4.2 thousand bushes/ha in the case of 60 kg/ha of potassium fertilizer in the background of mineral fertilizers, and 3.5 thousand bushes/ha in the case of 75 kg/ha foliar of potassium mineral fertilizer in the background increased compared to the background.

CONCLUSION

So, in the background of mineral fertilizers, potassium mineral fertilizer is applied to the level of maintenance of the number of stems at the end of the application period in the given option of 2-3 true leaves of the hemp plant, in the stages of budding-flowering and flowering-fruiting, it was found that it was 171.2 thousand bushes/ha, showing a high result compared to other options.

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