SEEDLING THICKNESS OF SORGHUM IN MEDIUM SALINITY SOILS

Ch.V.Toshpulatov[1], B.B.Tukhtashev[2] , B.T.Mavlonov[2]

[1]Researcher of Tashkent State Agrarian University, University str. 2, Tashkent province, 100140, Uzbekistan

[2]Docent of Tashkent State Agrarian University, University str. 2, Tashkent province, 100140, Uzbekistan

[3]Docent of Samarkand Veterinary Medicine Institute, Ulugbek street 77, Samarkand, 130100, Uzbekistan

ABSTRACT

Failure to wash off the harmful salts from the soil in time had a significant effect on the growth of young seedlings in these soils. In particular, seedlings that did not sprout in the control option made up 18%, while soil salinity was 3.3% in variants 4, 5, 6 washed in November and 7.6% in options 7, 8, 9 washed in February. During this period, even a small amount of salt in the soil is enough to kill it.

Keywords: seedling thickness, salt, sorghum, saline soil, furrow spacing, bushing, option, soil moisture, salt tolerance, medium salinity, water deficit.

INTRODUCTION

The relevance of the topic: during the visit of the President of the Republic of Uzbekistan to the Syrdarya region on April 7, 2023, taking into account the agricultural potential of the region and the salinity of many soils of the region, in order to develop the agricultural system of these regions, to select drought- and salt-resistant crop types and plant them on large areas, as well as livestock gave valuable advice on revealing the perspective. (1,2,3).

The total irrigated area of Syrdarya region is 266.7 thousand hectares (80%), of which 39.8% is weak, 30.4% medium, 6.4% strong, 2.7% very strong saline. In the effective use of these lands, in the conditions of current water scarcity, the introduction of the technologies of cultivation of crops resistant to saline effects into production is one of the urgent issues of the day (9).

The purpose and objectives of the study: Salinity tolerance of sorghum (sorghum) cultivar "Qarabosh" grown in saline lands, seedling thickness and growth development, productivity and product quality are studied .

Object of the research: The research was conducted at the farm "Bekzafarlik Khorvadoril" of Babur SFU in the direction of animal husbandry in Ak Oltyn District, Syrdarya Region. : The soil of the experimental area is gray.

METHODS AND MATERIALS

The field experiment was conducted in 9 variants, 4 repetitions. The options are arranged in one tier. The length of the building is 50 m. Each option includes 8 rows, i.e. one return of the seeder (50X5.6-280 m^2). The total area of each plot is 280 m^2, the calculated area is 140 m^2. Based on this, the total area of the experiment was 10080 m^2, and the calculated area was 5040 m^2.

In field experiments in agricultural crops, the author Dospekhov B.A. "Methodology of conducting field experiments" developed by M. Kolos, 1979 y. and "Field experiment methodology" developed by Sh.Nurmatov and others was used (2, 3).

The field experiment was carried out in the following options:

In options 1-3, the soil salt was not washed. Sorghum were watered at 70-80-75%; 70-80-70%; 70-70-70%;

In options 4-6, soil salinity was washed in November. Sorghum were irrigated as above at 70-80-75%; 70-80-70%; 70-70-70%;

In options 7-9, soil salinity was washed away in February. Sorghum were irrigated at 70-80-75%; 70-80-70%; 70-70-70%, respectively, compared to LFHC;

When corn is planted in furrows, 14 kg/ha is the norm. The furrow spacing is 60 cm. The plant spacing is 15 cm. planting will give good results.

The agrochemical and water properties of the soil are studied in the experimental field.

In order to determine the agrochemical parameters of the soil of the experimental field, mixed soil samples were taken from 0-30 and 30-50 cm soil layers by envelope method from 5 points of the field. The total amount of humus and humus in these samples I.M.Tyurin; nitrogen and phosphorus I.M.Malseva, L.N.Grisenko; in a nitrate nitrogen-ionometric instrument; mobile phosphorus is determined by the methods of B.P.Machigin and exchangeable potassium by P.V.Protasov.

Before planting in the plowed and under-plowed layers of the soil, samples were taken and submitted to the laboratory for analysis in the 0th 30 смand 30th 50 смlayers to determine the amount of NRK, general and mobile forms, humus, and humus (3, 4).

The volume weight of the soil is determined according to the irrigation procedures in each layer at depths of 0-50 cm 10 см.

The water permeability of the soil was determined using special cylinders in the spring and after harvesting.

RESULTS AND DISCUSSION

An indicator that determines the possibility of obtaining a high and high-quality harvest from the plant in any soil and climatic conditions is the thickness of healthy and vigorous seedlings. In the conditions of medium salinity soils, it is important to consider sorghum seedlings (7, 8, 9).

In particular, the number of fully matured seedlings in the control variant was 95120 or 82% of the total number of plants that should have matured. Also, in options 2 and 3, the number of sprouted plants was 82%. It should be noted here that in the control and options 2, 3, the soil salinity was not washed at the beginning of the vegetation. Therefore, young seedlings died in the saline environment and 18% less sprouted seedlings compared to the other soil saline leached variants.

In experimental variants 4, 5, 6 washed with soil salt in November, the number of plants that turned green at the beginning of the growing season was 100,890, or 95.6% of the seedlings that should turn green. In these options, the highest indicator was achieved in the experiment in terms of the number of seedlings that should

sprout. Because the main reason for this is that harmful salts are first washed well in the upper layer of the soil, including chlorine ions, due to the washing of soil salt in November. 68-73% is due to washing and reducing their negative effects (5, 6).

In experiments 7, 8, 9 washed with soil salt in February, the number of plants that turned green at the beginning of the growing season was 105,792, or 91.2% of the seedlings that should turn green. In these options, the number of seedlings that should sprout was 8.8% less than the number of plants that should sprout in practice. The main reason for this is that harmful salts were not completely washed out of the soil due to the washing of saline soil in February, and their negative effects were felt.

In the experiment, the seedling thickness of sorghum was calculated by the number of plants grown before the 1st harvest and by the number of plants grown before the 2nd harvest. In particular, the number of plants that germinated before the 1st harvest was 77,980, or 79.2% of the number of plants that should be germinated, in the control option without soil salt washing and soil moisture before irrigation of 70-80-75% compared to LFHC. In options 2 and 3, the index of sorghum accumulation was the same as the control option.

In experiments 4, 5, 6, which were washed with soil salinity in November, the number of plants that flowered at the beginning of the growing season was 101,131, or 91.2% of the number of plants that should be flowered.

In experimental variants 7, 8, 9, washed with soil salt in February, the number of plants that had sprouted at the beginning of the growing season was 90,557.9, or 85.6% of the number of plants that should be sprouted. 6% was less.

In the experiment, the number of plants that reached the 1st harvest and were harvested was in the following ratio according to the options. Among them, 335,314 in the control option, 465,202 in options 4, 5, 6, and 416,562 in options 7, 8, 9.

In the experiment, the number of plants that fell before the 2nd harvest decreased in all options. In particular, the number of plants grown in the control option was 37.5% of the total number of plants to be planted. In options 4.5, 6, this indicator increased from 43.9% to 36.7%, and in options 7, 8, 9, the number of plants grown as the soil moisture before irrigation decreased from 70-80-75% to 70-70-70%. even smaller indicators were recorded. In these options 7, 8, 9, the number of plants harvested before the 2nd harvest was 42.1, 36.3, 33.2%, respectively. The main

reason for this was considered to be the decrease of soil moisture in all options before the second harvest.

CONCLUSION

In conclusion, it should be noted that the failure to wash away harmful salts from the soil in time had a significant effect on the growth of young seedlings in these soils. In particular, seedlings that did not sprout in the control option accounted for 18%, while soil saline was 3.3% in options 4, 5, 6 washed in November, and 7.6% in options 7, 8, 9 washed in February. During this period, even a small amount of salt in the soil is enough to kill it.

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