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Studying the Procedure and Norms of Irrigation White Cabbage Planted in the Early Season

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ABSTRACT

the article presents valuable information about the procedure and norms of watering white cabbage planted in the early season with a deep scientific analysis.

KEYWORDS: early maturity, white cabbage, watering procedure, cabbage seedling

Introduction

It is known that the amount of water trapped between soil layers is called soil moisture capacity. Moisture in which all voids in the soil are completely saturated with water is called full moisture capacity. The norm of soil moisture capacity depends on its mechanical and organic composition, granularity. The moisture capacity is large in serhumous, loamy and granular soils, and low in sandy and low-humus soils. Compared to gray soils, grass-gray soils have a slightly higher total moisture capacity. In the experimental field, the total humidity rose up to 50-60 cm from the upper layer and then decreased. Then its indicators are 37.5% in the 0-30 cm layer; 0-50 cm. 38.7% and 38.8% in the 0-100 cm layer.

Natural moisture content varied among soil layers, and ranged from 13.5 to 15.8% in the 0-30 cm tillage layer, averaging 14.9%. 16.3-19.0% in the 30-50 cm layer, 16.0% in the 0-50 cm layer and 20.2-15.8% in the 50-100 cm layer, and 17.0% in the 0-100 cm layer. made 0%.

When only the capillary spaces of the soil are saturated with water, it is called capillary moisture capacity or relative moisture capacity. 0-30 cm relative to the weight of the soil. field wet capacity in the arable layer is 24.5%; It was 24.1% in the 0-50 cm layer and 24.0% in the 0-100 cm layer. In this case, its amount decreased from the upper layers to the lower (60-70 cm) layers.

Volumetric weight of soil is 1 m. samples were taken every 10 cm. In it, soil samples were taken five times from the upper layers (0-50 cm) and three times from the lower layers.

Compared to gray soils, the density of meadow-gray soils is slightly lighter. In the experiment, 1.18 g/cm3 in the 0-30 cm layer; 0-50 cm. at 1.23 g/cm 3 and 0-100 cm. layer was 1.30 g/cm3. 1.15-1.23 g/cm3 in the driving layer; 30-50 cm. at 1.28-1.31 /cm 3 and 50-100 cm. in the layer was 1.33-1.41 g/cm3.

The water permeability of the soil is understood as the ability to transfer a certain amount of water from the upper part to the lower part of the layer. The total amount of water lost in 1 hour is calculated by the rate of water permeability of the soil. Water consumption is measured every 5-10 and 15 minutes, and the next ones are measured every 30 and 60 minutes.

Before the experiment, in the first decade of June, water consumption was 0.74 mm per 5 minutes. or 44.4 mm in 1 hour. it happened. In the following hours, it was 0.38 mm per minute or 22.8 mm per hour. 43.8% of the absorbed water (1.69 mm) was consumed in 1 hour and 22.5% in 2 hours. Its amount decreased by 1.95 times in 2 hours compared to 1 hour.

In the 3rd hour there was 0.19 mm or 11.4 mm per hour, and it was 11.2 mm per hour. In the 4th-6th hours,

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the consumption of water decreased sharply and was 9.0-6.6 mm per minute, making 8.9-6.5% of the total share. 101.4 mm of water was absorbed in 6 hours and 1014 m3 per hectare.

In the fall, when the water permeability of the soil was determined, the results were obtained. In the 1st hour, 0.61 mm of water per minute was lost, and it was 36.6 mm per hour. In the 2nd hour, 0.32 mm per minute or 19.2 mm per hour of water was used. Compared to the total amount (1.43 mm), 42.7% of water was consumed in the 1st hour, and 22.4% or 1.9 times less water was consumed in the 2nd hour.

In the 3rd hour, 0.21 mm per minute or 12.6% of water was consumed per hour, and in turn it was 14.7%. In hours 4-6, 0.13-0.06 mm of water was consumed per minute, and it was 7.8-3.6 mm per hour, which was 9.1-4.1% of the total water. In autumn, 858 m3 per hectare was consumed in 6 hours, which was 156 m3 or 18.2% less than the summer figure. This is a natural condition due to the fact that machinery and people enter the soil during the growing season, and soil compaction due to irrigation slows down water flow.

Its mechanical composition plays an important role in determining the properties and characteristics of the soil. The reason is that the mechanical composition of the soil has a strong influence on the water and air regime. Medium loamy soils are considered to be the best soils for irrigated cotton and grain farms. The percentage ratio of mineral particles of different sizes is called the mechanical composition of the soil. If the mechanical elements are larger than 1 mm in diameter, they are called soil skeleton, and if they are smaller than that, they are called melkozem. Melkozem is also divided into two. Those larger than 0.01 mm in diameter are called physical sand, and those smaller than that are called physical clay.

The mechanical composition of the examined soil section was medium sandy, and the amount of physical clay varied from 34.8 to 40.8%.

Typical old irrigated grass-gray soils are mostly 0.05 to 0.1 mm. It is composed of particles up to and smaller than that and is considered microstructured. Such soils are characterized by good capillary porosity, high water supply, nutrient mobility, and high productivity.

In the soil we studied, the microaggregate particles were mainly composed of large dust particles (0.05-0.1 mm), 64% in the plowed layer, and 59% to 68% in the sub-ploughed layer, while fine sand particles (0.1 - 0.05 mm) was 9-11%.

In relation to limited field moisture capacity (LFMC), the soil moisture before irrigation was measured in the 0-40 cm layer thickness in the first period from the planting of seedlings to the beginning of cabbage harvest, and in the second period, the 0-60 cm layer was taken from the beginning of cabbage harvest to the end of the growth period. LFMC irrigation procedure was carried out in the following scheme. Calculations were made in the 0-40 cm layer in the first number and in the 0-60 cm layer in the 2nd number. Options: 60-60 control; 70-70; 70-80; 70-90; 80-80 and 80-70% were used.

Soil moisture before irrigation is 14.6 compared to absolute dry soil in the 1st stage; It fluctuated between 17.1 and 19.5%. When soil moisture before irrigation is used in field conditions using the Kabaev method, irrigation options are 33; It was 36 and 41%. They are LFMC – 60; Corresponds to 70 and 80%.

LFMC from the beginning of picking cabbage to the end of the growth period - 60; 70; 80; At 90%, relative to the absolute dry soil, the pre-irrigation moisture is 14.4, respectively; 16.8; It was 19.2 and 21.6%. 33 in Kabaev's zoldir method; 36; It was equal to 41 and 45%. The sap concentration in the cells of white cabbage leaves was determined using a field refractometer between 10-11 am in the 4th-5th day. Phase 1 - before LFMC (control) irrigation at the beginning of cabbage harvest, the concentration of cabbage leaf juice fluctuated between 6.0-6.6% when the soil moisture was 60-60%. When soil moisture before irrigation increased to 70-70%, the concentration of cabbage leaf juice decreased slightly and was 5.5-6.0%. When soil moisture before irrigation was LFMC 80-80 and 80-70%, the concentration of leaf sap decreased to 5.1-5.4%. In phase 1, the average index of leaf sap for all options was in the range of 5.45-5.9% (see Table 1).

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Table 1. Effect of soil moisture on cabbage leaf cell sap concentration

Soil moisture according to LFMC, %	Until the cabbage begins to roll (20/VIII)	During the formation of cabbage (25/VIII – IX)
60-60 назорат	6,0-6,6	11,2-11,7
70-70	5,5-6,0	10,2-11,0
70-80	5,5-6,0	9,4-9,8
70-90	5,5-6,0	6,8-7,1
80-80	5,1-5,4	9,5-9,9
80-70	5,1-5,4	10,1-10,6
$\overline{X}$	5,45-5,9	9,5-10,0

In the 2nd period, from the period when the cabbage is forming until the end of the growing season, in the control (60-60%) option, the leaf cell juice is 11.2-11.7%; It was 10.2-11.0% at 70-70%.

As soil moisture before irrigation increased, leaf cell sap decreased. 9.4-9.8% at LFMC 70-80%; 6.8-7.1 at 70-90%; 9.5-9.9% at 80-80%; It was 10.1-10.6% in 80-70%. The average rate of all irrigation regimes was between 9.5-10.0%. In addition to soil moisture, the concentration of leaf cell sap was also influenced by air temperature and, to a lesser extent, wind.

The number of irrigations and durations of irrigation of Navruz, Tashkent 10 varieties and Magnus F1, Fresco F1 hybrids were studied.

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