FORMATION OF PRODUCTIVITY ELEMENTS IN DIOECIC HEMP

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INTRODUCTION

Hemp is one of the most important plants that produce fibers of vegetable origin and textile is one of the many plants that produce textile fibers. With very varied uses in the industry and in other industrial branches, hemp stems contain 26-32% fibers (I. SANDRU, RODICA PARASCHIVOIU et al., 1996).

It is an important source of wood and fiber, the amount of wood produced by one hectare of hemp is equal to the growth made by one hectare of forest in a year (N.CAPRUSO, 1996). fibers used in the textile industry for various much appreciated fabrics, given the valuable physical-mechanical properties (AS PGH DST, 1993).

Technical and economic studies show the potential of hemp as fiber in various types of studies. hemp is a very good crop to grow in the morning, at a depth of 75 cm, it is recorded 7-8°C. When grown too early, hemp plants grow unevenly, grow slowly, and are not resistant to the unfavorable conditions that follow. The delay in sowing leads to a decrease in the productivity of the crop, especially in dry years. The plants are attacked by fleas, bloom early and the stems remain short (G. BÉTAUT, 1970).

The potential of hemp as fiber is based on both fiber and fiber production. At low densities, the size of hemp tightens, are uneven and have a percentage of fiber. At high densities, thin and uniform plants with a high fiber content are obtained, but in such conditions, the taproot remains shorter, which is why the production of hemp per hectare decreases.

The sowing density at which the highest seed production is obtained is 110-120 kg/m² (V. TABARĂ, 1994). The limits of variation of the number of germinating seeds / m² are, according to B. BARNABIE, between 60 and 125, which corresponds to 12-25 kg of seeds per hectare.

In 4 different localities (Lovrin, Papani-Boboci, Secuiesc-Roman, Turda), the optimal sowing density from the experiments was 79 kg/m² (EL, 91 kg seeds / ha) (D. IONESCU, RODICA PARASCHIVOIU et al., 2003). Factors such as crop canopy light, temperature and rain are important factors that influence the production of hemp. The highest hemp yield is obtained at a density of 50-60 seeds/m².

Drought during the flowering period reduces the production and quality of fibers. Drought period during this season can also reduce seed production.

From the point of view of precipitation, hemp needs the best calibration conditions as areas where the vegetation period is longer, and the amount of precipitation fall for hemp for fiber, or 350-450 mm to hemp for seed.

Due to the less developed root system, soil moisture plays a particularly important role in the growth of hemp plants. Hemp has a water use efficiency of 60-75% in the U.S. (active hydric demand), (V. TABARĂ, 2003).

MATERIAL AND METHOD

The study took place in 2017-2019 in the dioecious hemp breeding laboratory at ARDS Lovrin. The soil on which the experimental field was located is a typical chernozem, with a medium clay structure, specific to the area of influence of the forest. The climate is temperate, with an annual average rainfall of around 720 mm and a multimodal average temperature of 10.7°C. Hemp is one of the most important plants that produce fibers of vegetable origin and is one of the many plants that produce textile fibers. With very varied uses in the textile industry and in other industrial branches, hemp stems contain 26-32% fibers.

Technological factors are very important and are influenced by climatic conditions. Hemp is sown when the soil in the morning, at a depth of 5-7 cm, it is recorded 7-8°C. When sown too early, hemp plants grow unevenly, grow slowly, age and do not recover in the favorable conditions that follow.

A very significant positive correlation is established between the two parameters, the value of the correlation coefficient being r = 0.97 ± 0.05.

Key words: hemp, variety, density, influence, parameters, plant length.

The influence of density on the length of the fibers

The nutritional space obviously influences all the elements of plant productivity. Regarding the influence of density on the length of the fibers, it is very significantly influenced by this factor. The highest value is found at the lowest density - 80.43 cm and decreases very significantly at the other densities studied, up to 57%.

Although the climatic conditions of the three agricultural years were very different, no statistically significant differences in plant size were obtained during the three vegetation cycles. The highest value of this parameter was obtained in the third year of experiments, 2019, by 22.3% more in 2017 and by 5% more in 2018. And in 2017 the increase obtained compared to the control was 13%.

The height of the plant, in all four varieties studied, is closely grouped around the value obtained by the control variant - 226.2 cm. The highest value is presented by the control variety, and the lowest by the Ly 45780 line.

The agricultural year 2018 is the year in which the highest influence length was recorded, 75.46 cm, with 58.9% compared to the control. Although in 2017, the study carried all the results, in 2019 this parameter highlights a higher value than the control, exceeding by 58.9%.

The highest value is obtained in the control variant, the Lovrin 110 variety - 60.05 cm, followed by the Aramaia varieties, the Lovrin 110 - 60.05 cm. The lowest value is recorded by the Ly 45780 - 59.24 cm, with 10.3% less than in the control version.

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