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THE TECHNOLOGY OF GROWING OF SUCH ENERGY CROPS FOR THE PRODUCTION OF DIFFERENT TYPES OF BIOFUEL

Covering the fundamentals of domestic and foreign technologies of cultivation of such energy crops (choice of place and the soil, terms and the scheme of plantings, the duration of operation of plantings and their performance), drawn attention to the need for improvement in order to obtain a larger increase in biomass.

***Keywords**: energy crops, plant growth stimulants, biofuel, performance*

Introduction. Today solving the energy issue is the transition from exhaustible to renewable energy, on biofuel [2]. But in Ukraine the development of production and use of biofuels constrained and behind the internal needs of the country due to lack of raw materials. Therefore, from this point of view before the domestic science there is an urgent task to investigate the problem and develop elements of technology of cultivation of energy plants.

One of the reserves increase yield and improve the quality of power plants is the use of growth promoters. The problem of the regulation of growth, development and growth of plant biomass through growth promoters is one of the most important in the modern workplace.

Analysis of recent research and problem statement. Analysis of recent research and publications suggests that most forecasts prefer vegetable renewable biofuels. In recent years, many scholars working on technology of cultivation of rare power plants.

In economically developed countries are widely spread technology and the growing use of energy crops. But the study of the dynamics of growth of biomass

power plants have not been conducted. The purpose of our study was the technology of growing energy crops and study of growth regulators on the growth of biomass.

Methodology of research. The study of plant growth regulators conducted in the Botanic Garden National of agro-ecological University, Zhytomyr hleyevyh on sod-calcareous soils. Seeds before sowing sprayed with solutions of plant growth regulators Emistim Rehoplantu C and at a concentration of 0.02% and water (control).

The experiment was laid out in 6 single repetition, placement of repetitions in each tier, the options-systematic. Total area of 195 m2.

Technology of multi-sidy, sylfiy**,** sorghum many years, sverbyha East based on the creation of new perennial plantations for conditions Polessye cultures.

As perennial crops are characterized by drought, have a heat, ruggedness to the soil, high efficiency and a wide range of applications.

At one site can grow from 6 to 20 years. Given that this technology provides long-term use per unit area, provided with high economic efficiency.

To ensure the operation of processing equipment requires a constant supply of biomass. It is therefore important to ensure receipt of biomass from early spring to late autumn.

It is advisable to grow not only traditional energy crops, but also of rare, particularly sverbyha, perennial sorghum, sylph, sida. They are efficiently used by 6 - 8 17 -20 years and provide an annual output of 30 t / ha dry matter entirely.

These crops do not require much energy and material costs. These cultures are characterized by multiple exclusion aboveground mass during the growing season , the high rate of seed multiplication , resistance to diseases , pests and weeds.

Biomass for energy purposes can be used for combustion , as well as in processed form as a liquid or gaseous fuel.

Thanks to the high environmental stability sylph, sit long, in contrast to traditional plants, biomass rapidly give rise to late autumn. They can withstand short-term flooding and reduce the temperature to -6 C.

In spring perennial vegetation renewal energy crops can be divided into the following categories - culture, with very intense, medium and late spring regrowth.

For sverbyha East typical intensive early spring regrowth, belongs to group 1 group 2 included sylph long and sits down. Up to 3 groups of sorghum is perennial.

Sorghum is used as a long-term energy, food, and culture erosion. In Zhytomyr botanical garden plant forms a bush with 4 - 5 stems productive height 245 - 340 cm main stem and all lateral shoots from the top end panicle.

The leaves are 70-85 cm long, 4-6 cm wide, their number per plant ranges from 15 to 23 units. Inflorescence - panicle length 40-44 cm Seeds - elongated, brown. Weight of 1000. - 8 g sowing - 2 beginning of May. Field germination is 80-85%.

In the botanical garden ZHNAEU from germination to tillering 20-25 days from tillering to enter into a tube - 13, by throwing bunches - 23 to bloom - 11 days. Then after 30 days begins wax ripeness and even after 15 days full ripening seeds.

As a perennial, sorghum can be placed outside the crop rotation. It is advisable to lay perennial plantations on slopes where annual crops are contraindicated. Planting should be carried out in moist soil. Seeding depth - 20-30mm. In phytomass sorghum sown string method.

In the first year of life to the closing lines of sorghum long-term care needs. Loosen the soil to crops and destroy weeds. Collecting seeds is carried out in the late ripeness to seed shattering. Pest perennial sorghum is not damaged. This year marked the leaves brown rust [1].

The results. Phenological observations carried out by us have shown a positive impact of fertilizers and plant growth stimulators on the main morphological parameters of sorghum long.

The results showed that the use of plant growth stimulators and fertilizer effect on their height (Fig. 1).

Thus, the greatest increase in plant height was observed with increasing doses of nitrogen to 75-100 kg / ha of active ingredient. Plant height in these variants was 265-271 cm, 20-26 cm to be higher than the control. Application of plant growth stimulators, especially Emistim C increased the height to 340 cm.

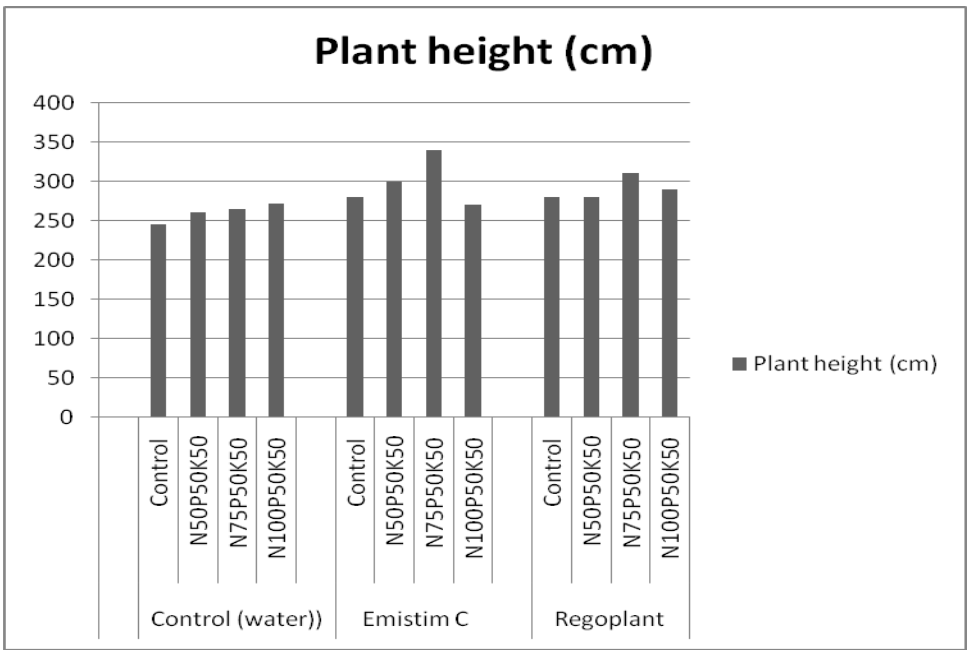

Figure. 1 Effect norms of fertilizers and growth regulators on plant height of sorghum many years.

Our data is observed relationship between the number of stems of sorghum plants bushes and long-term application of fertilizers and plant growth stimulators. Yes, most of the stems is marked in variants where the background mineral nutrition of plant growth stimulant used Rehoplant (Fig. 2).

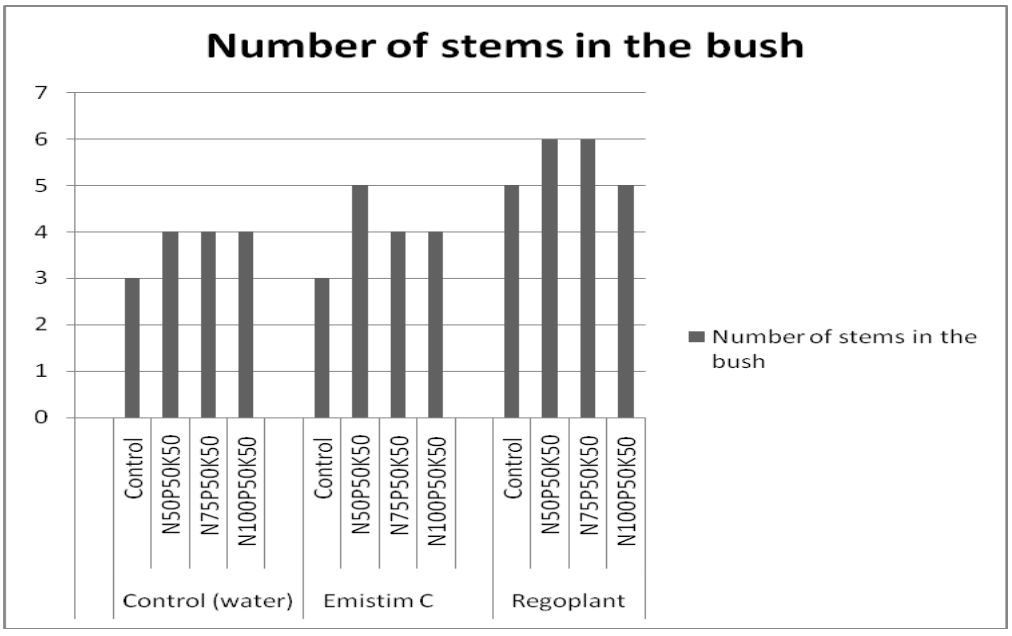

Figure. 2 Effect norms of fertilizers and growth regulators on number of stems of sorghum plants in the bush long.

The increase in plant height and number of stems in the bush in the use of fertilizers and growth promoters affected the yield of green mass (Fig. 3). As can be seen from Figure 3, the optimum nitrogen dose is 50 to 75 kg / ha the background phosphorus- potassium fertilizers. Increasing the dose to 100 kg nitrogen / ha. Expected effect is not allowed. Treatment of seed emistim C and Rehoplantom had a positive effect on the yield of green mass. The maximum values for option are marked using Rehoplantu.

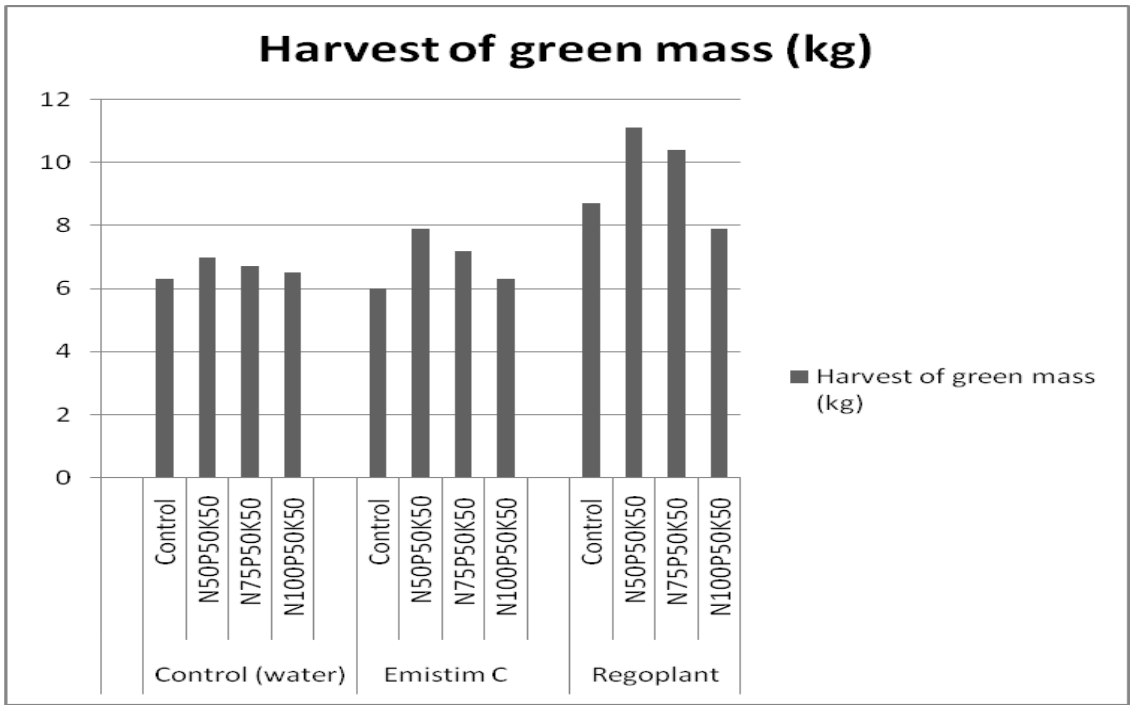

Figure. 3 Influence norms of fertilizers and growth regulators on the yield of green mass of plants sorghum long

This figure is the mass of 1000 seeds is important in determining the quality of seeds. In our experiment observed a positive effect of growth stimulants Emistim C and Rehoplantu against the background of mineral nutrition. Most clearly seen in variants where the nitrogen dose was 50-75 kg/ha the background phosphorus-potassium fertilizers and Rehoplantu (Fig. 4).

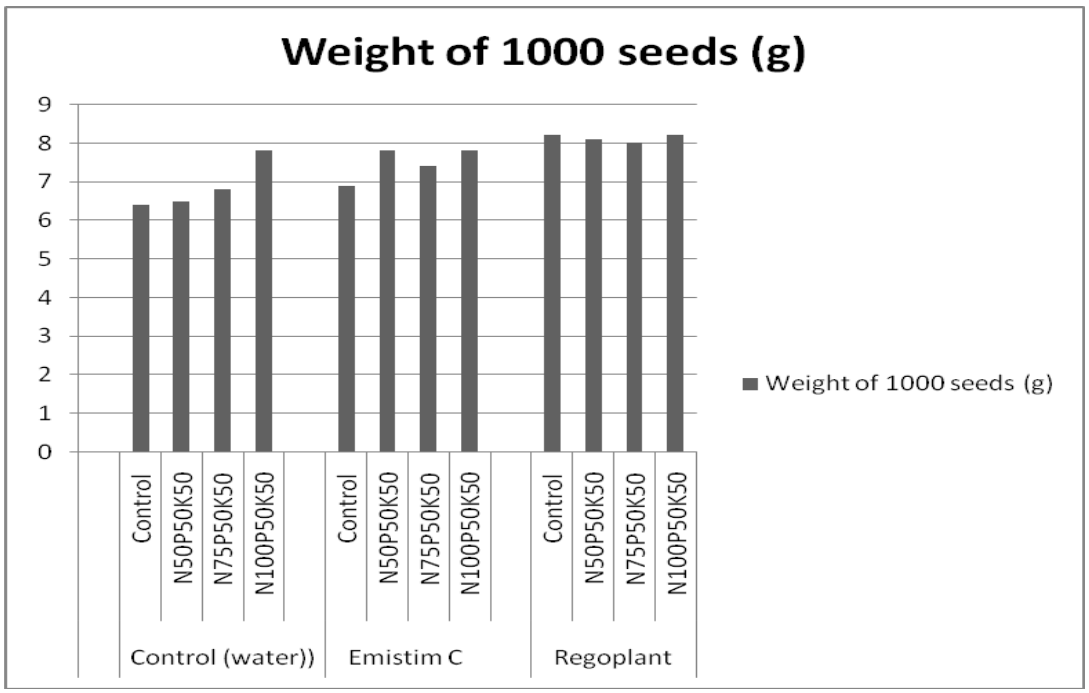

Figure. 4 Effect norms of fertilizers and growth regulators on the mass of 1000 seeds of many plants of sorghum.

Conclusions.

1. Application of plant growth stimulators and fertilizer effect on plant height of sorghum. The largest increase in plant height was observed with increasing doses of nitrogen to 75-100 kg/ha of active ingredient. Application of plant growth stimulators, especially Emistim C increased the height to 340 cm.

2. The greatest number of stems in the bush sorghum marked in variants where the background mineral nutrition of plant growth stimulant used Rehoplant.

3. The increase in plant height and number of stems in the bush in the use of fertilizers and growth promoters affected the yield of green mass. The maximum values for option are marked using Rehoplantu.

4. Na an indicator such as the mass of 1000 seeds, observed positive effect of growth promoters Emistim C and Rehoplantu against the background of mineral nutrition. Most clearly seen in variants where the nitrogen dose was 50-75 kg/ha the background phosphorus-potassium fertilizers and Rehoplantu.

In the future, further research should be directed to the study of technologies of radioactive contamination in Ukraine.

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Анотація

Можарівська І.А.

Технологія вирощування малопоширених енергетичних культур для виробництва різних видів біопалива

Висвітлено основи вітчизняних і зарубіжних технологій вирощування малопоширених енергетичних культур (вибір місця і ґрунту, строки і схеми закладання насаджень, тривалість експлуатації насаджень та їх продуктивність), звернуто увагу на необхідність їх удосконалення з метою отримання більшого приросту біомаси.

Ключові слова: *енергетичні культури, стимулятори росту рослин, біопаливо, продуктивність.*

Аннотация

Можаровская И.А.

Технология выращивания малораспространенных энергетических культур для производства различных видов биотоплива

Освещены основы отечественных и зарубежных технологий выращивания редких энергетических культур (выбор места и почвы, сроки и схемы закладки насаждений, продолжительность эксплуатации насаждений и их производительность), обращено внимание на необходимость их усовершенствования с целью получения большего прироста биомассы.

Ключевые слова: *энергетические культуры, стимуляторы роста растений, биотопливо, производительность.*