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PECULIARITIES OF ESTABLISHING ENERGY PLANTATIONS AND GROWING OF ENERGY CROPS

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The study of plant energy resources is of high importance for reducing Ukraine's energy dependence. Energy crops, such as willow [1], miscanthus [2–4] and switchgrass [3, 5–7] are comprehensively studied in our country for this purpose.

The problem to be solved in our research is to increase the volume of energy crops biomass depending on the growing conditions. Cultivation technology, along with the weather conditions have the greatest influence on the yield of energy crops.

It is recommended to plant energy crops on marginal lands, that is, those that are not used for food crops. Therefore, field preparation should be thorough and planned in advance. If there are a large number of weeds in the field separated for energy crops, they must be destroyed by applying glyphosate herbicides of permanent action in the autumn before plowing. Disking, plowing and several cultivations are involved in basic tillage of the soil. The main purpose of such soil preparation is to create the most favorable water-air, thermal and nutrient regimes of the soil throughout the growing season. In addition to improvement of physical, chemical and biological properties, proper tillage helps to kill weeds, pests and plant diseases.

In spring, harrowing and pre-sowing tillage to the depth of seed covering are carried out. It is established that the smaller seed, the smaller the depth of its putting, the larger seed is put deeper into the soil. Vegetative organs of willow are planted by hand or by planting machines, taking into account the chosen planting scheme.

Sowing or planting of energy crops is carried out at certain density of crops, taking into account the method of cultivation. After sowing of small-seeded crops, rolling is performed. When rows appear, inter-row tillage is carried out and plants are protected from weeds and pests.

Harvesting of energy crops is practiced from three-year plantations, the crushed biomass is immediately transported to the place of processing. Thus, the sequence of growing energy crops involves:

- allocation of land for establishing energy plantations;
- basic and pre-sowing tillage;
- preparation of seed and planting material;
- sowing or planting;

- care of crops;
- harvesting.

However, the plant fertilization system has not been fully developed so far, which depends on the place of growing energy crops, the presence of nutrients in the soil and other factors. In addition, measures of pre-sowing seed preparation to reduce its weight sowing need to be clarified. Development of the logistic chain of the management of cultivation, harvesting and processing of energy crops yield will provide a significant amount of biomass. And this will reduce the energy dependence of local communities and improve them a welfare.

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