

PROSPECTS FOR AUTOMATION OF ENERGY WILLOW PLANTING MASHINES

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Existing machines for planting energy crops cuttings are characterized by the low productivity because of the speed restriction to hand stowing into a plant setter. Therefore, establishment of mechanisms for the cutting autostowing into a plant setter is a current scientific and production task.

The research is set against the analysis of the known planting machine constructions that are used for setting the potted plants and forest seedlings. In this research, the methods of structural and factorial analysis with regard to the mechanisms' arrangement were used, as well as peculiarities of the working processes occurring at each stage of the overall technological process of the cutting relocation from the reservoir to the land area were highlighted.

Having analyzed various designs, we came to the conclusion that in order to increase the productivity of planting machines, the process of feeding the cuttings from the containers to the planting machine needs to be improved. Also it is necessary to use intermediate cutting pools, which creates a buffer that compensates for the discrepancy between the planting machine productivity and human capabilities. But this solves the issue of productivity increasing and reducing the proportion of manual labor only partially.

Creating mechanisms for automated cutting feeding to the planting machine or directly to the planting site is an important scientific task in increasing the productivity of planting machines.

As a result of the design analysis of existing means of planting automation and implementation methods of automated process of the planting material feeding, we managed to allocate possible ways of organizing different methods in the technological process, which is reflected in the structural and logical process scheme.

Keywords: *planting machine, plant setter, feed gearing, planting head, cassette mechanism, energy willow*

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