

STUDY OF THE WORKING PROCESS OF THE ACTIVE PARTS OF AN EQUIPMENT FOR EXTRACTION PLANTS WITH ROOT BALL, EXPLANT 500

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Abstract

In the production of wooden seedlings (fruit trees or shrubs and ornamental trees), the high exploitation of the biological potential of plants and use of effective methods and techniques, are the main ways to increase production both quantitatively and qualitatively. An important part, in terms of labor consumption, in work technologies in nurseries, it have putting out of seedlings, n order to its transplantation or deliveries for planting.

The working principle of the machinery and tehcnical equipment for extraction plants with root ball is based on penetration into the soil of the active working parts (spades), cutting the soil ball and extracting it together with the plant (tree saplings, tree, shrub), in a view to transplantation. From constructive point of view, penetration into the soil of the active working parts is ensured by means of some double acting hydraulic cylinders, the penetration force beeing linear and directly proportional to the pressure in the hydraulic system. From analysis of the results obtained in the tests, was noted the fact that the resistance to penetration of the soil in which we worked, determined over the depth of penetration in the soil of the active parts (spades) of the equipment increase directly proportional to the depth of penetration and inversely proportional with soil moisture.

Increasing the efficiency of the penetration force into the soil, of the active working parts (spades) is achieved by providing a hydraulic pulsating force (with shocks) through a hydraulic control and operated device, with shocks. Hydraulic operation with shocks can be used as needed,- in heavy soils with high penetration resistance.

Key words: Root ball, spades, tree saplings, shrubs, penetration force

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