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Machine That Provides Mineral Fertilizer Equal to the Soil on the Slopes

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Abstract : The reliable food supply of the population of the republic is one of the main directions of the state's economic policy. Grain growing, which is the basis of agriculture, is important in this area. In the cultivation of cereals on the slopes, the application of equal amounts of mineral fertilizers the under the soil before sowing is a very important technological process. The low level of technical equipment in this area prevents producers from providing the country with the necessary quality cereals. Experience in the operation of modern technical means has shown that, at present, there is a need to provide an equal amount of fertilizer on the slopes to under the soil, fully meeting the agro-technical requirements. No fundamental changes have been made to the industrial machines that fertilize the under the soil, and unequal application of fertilizers under the soil on the slopes has been applied. This technological process leads to the destruction of new seedlings and reduced productivity due to intolerance to frost during the winter for the plant planted in the fall. In special climatic conditions, there is an optimal fertilization rate for each agricultural product. The application of fertilizers to the soil is one of the conditions that increase their efficiency in the field. As can be seen, the development of a new technical proposal for fertilizing and plowing the slopes in equal amounts on the slopes, improving the technological and design parameters, and taking into account the physical and mechanical properties of fertilizers is very important. Taking into account the above-mentioned issues, a combined plough was developed in our laboratory. Combined plough carries out pre-sowing technological operation in the cultivation of cereals, providing a smooth equal amount of mineral fertilizers under the soil on the slopes. Mathematical models of a smooth spreader that evenly distributes fertilizers in the field have been developed. Thus, diagrams and graphs obtained without distribution on the 8 partitions of the smooth spreader are constructed under the inclined angles of the slopes. Percentage and productivity of equal distribution in the field were noted by practical and theoretical analysis.

Keywords : combined plough, mineral fertilizer, equal sowing, fertilizer norm, grain-crops, sowing fertilizer
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