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EFFICIENT TECHNOLOGY IN CULTIVATION OF SECONDARY CROPS

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Relevance of the Topic: In recent years, in countries such as the USA, Brazil, India, Australia, and many others, the method of sowing into stubble without deep plowing—by applying surface tillage—has been increasingly introduced. In order to reduce production costs, the implementation of resource-saving technologies for soil cultivation has become an urgent issue today (1.2).

According to available data, in the Republic the total area of sandy loam, light-textured, and sandy soils is around 500–700 thousand hectares. At the same time, in crop fields where perennial weeds such as reed, couch grass, wild rye, *salomaleykum* and others are absent, but annual weeds are spread, it is advisable not to plow the soil in autumn but to carry out surface tillage with appropriate tools in early spring.

Research Methodology. The experiment consisted of 8 variants. In the study, mung beans, beans, soybeans, and maize were sown in fields vacated after winter wheat. For land preparation, surface tillage tools such as chisel plow, cultivator, and harrow were used.

Research Results. During crop preparation, by using non-traditional methods (chisel plow, cultivator, harrow), the soil was prepared within a short period (only 1.5–2.0 days were required for land preparation). First, straw residues were collected. After winter wheat, the field was irrigated with a light irrigation norm. In this case, 500–600 m^3 of water per hectare was applied through furrows in frequent intervals. Then, using the available surface tillage tools in the farm—specifically the cultivator (KRH-3.6)—the soil was loosened to a depth of 12–15 cm. During soil cultivation, a soft and fine layer was formed. Such surface preparation before sowing is considered sufficient. Loosening the soil surface before sowing is regarded as an important agrotechnical measure. Once the soil was ready, the seeds of secondary crops were sown. Early spring weeds and leftover stalks from the previous year were gathered and removed to places where they did not interfere with mechanized operations. The field was thus brought into a sowing-ready condition. Deep tillage was avoided, since it could create clods and lumps. During

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loosening with cultivators, harrowing was carried out immediately afterwards, which crushed large clods and prepared the soil for sowing.

In the traditional method of land preparation (variant 4), the vegetation period of secondary crops lasted 105–110 days, and the crops matured by October 20. In the non-traditional method, i.e., when surface tillage tools were used, the vegetation period lasted 90–96 days, and harvesting was completed at the end of September or the beginning of October. In terms of yield, no significant differences were observed between the two land preparation technologies. However, it should be noted that in the traditional method, harvesting of secondary crops delayed autumn plowing, which in turn postponed winter wheat sowing. In the non-traditional method, i.e., with surface tillage tools, autumn plowing could be carried out on time, ensuring timely sowing of winter wheat (3).Secondly, for plowing one hectare of crop field, 35–40 liters of fuel were consumed, and for two diagonal passes, an additional 25 liters were required. In total, 85–90 liters of fuel were spent, which increased labor costs. This inevitably affected the production cost of the harvested crops.

Yield of secondary crops, centners per hectare.

№	Variants	Replications			Average (c/ha)
		I	II	III	
1.	Mung bean (traditional method)	12,7	13.1	12,4	12,7
2.	Bean (traditional method)	22,1	21.8	20.3	21,1
3.	Soybean (traditional method)	17,1	16.3	16,6	16,6
4.	Maize (traditional method)	42,7	43.0	44,1	43,2
5.	Mung bean (non-traditional method)	12,9	13,7	14,1	13,9
6.	Bean (non-traditional method)	22,0	22,9	23,5	22,8
7.	Soybean (non-traditional method)	18,1	19,.3	19,0	18,8
8.	Maize (non-traditional method)	45,8	46,9	47,5	46,4

Under traditional land preparation methods, yields amounted to 12.7 c/ha for mung beans, 21.1 c/ha for beans, 16.6 c/ha for soybeans, and 43.2 c/ha for maize. Under non-traditional land preparation methods, yields reached 13.9 c/ha for mung beans, 22.8 c/ha for beans, 18.8 c/ha for soybeans, and 46.4 c/ha for maize. When surface tillage tools are used, autumn plowing can be carried out on time, which ensures timely sowing of winter wheat.

Annotation.

Under the traditional method of soil preparation, yields amounted to 12.7 c/ha for mung bean, 21.1 c/ha for bean, 16.6 c/ha for soybean, and 43.2 c/ha for maize. Under the non-traditional method of soil preparation, yields reached 13.9 c/ha for mung bean, 22.8 c/ha for bean, 18.8 c/ha for soybean, and 46.4 c/ha for maize.

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Keywords: traditional, non-traditional, mung bean, bean, soybean, maize, soil.

Аннотация

Анъанавий усулда ер тайёрлашда мошдан 12,7 ц/га, ловиядан 21,1 ц/га, соядан 16,6 ц/га ҳамда маккажўхоридан 43,2 ц/га ҳосил олинган бўлса, ноанъанавий усулда ер тайёрлашда мошдан 13,9 ц/га, ловиядан 22,8 ц/га, соядан 18,8 ц/га ва маккажўхоридан 46,4 ц/га ҳосил олинди.

Калит сўзлар: анъанавий,ноъананавий. мош,ловия,соя ,маккажўхори,тупроқ.

Аннотация

При традиционном способе подготовки почвы было получено 12,7 ц/га маш, 21,1 ц/га фасол, 16,6 ц/га сои и 43,2 ц/га кукурузы, при нетрадиционном способе подготовки почвы – 13,9 ц/га маш, 22,8 ц/га фасол, 18,8 ц/га сои и 46,4 ц/га кукурузы.

Ключевые слов: традиционный, нетрадицинный. маш,фасол,соя ,кукуруза, почва.

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