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RESULTS OF STUDYING THE EFFECT OF PLUG PARAMETERS IN "PUSH-PULL" SYSTEM ON PERFORMANCE PERFORMANCE

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Annotation: A plug was developed and tested in the push-pull system, which consists of working parts that are hung on the front and back of the tractor, which allows to reduce energy consumption and increase productivity in the main tillage. The plug developed in the tests performed the technological process reliably, and its performance was at the level of the requirements placed on it.

Keywords: push-pull plug, working parts of the plug that hang on the front and back of the tractor, housings, support wheels.

РЕЗУЛЬТАТЫ ИССЛЕДОВАНИЯ ВЛИЯНИЯ ПАРАМЕТРОВ РАЗЪЕМОВ СИСТЕМЫ «PUSH-PULL» НА РАБОЧИЕ ХАРАКТЕРИСТИКИ

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Introduction. One of the most important ways to reduce energy consumption and increase productivity in tillage is to use push-pull tillage machines, which are mounted on the front and rear of the tractor. At the same time,

due to the optimal distribution and increase of loads on the moving parts of tractors, their traction properties with the soil are improved, which results in increased productivity and reduced fuel consumption [1-4].

Based on the above, in collaboration with scientists of our institute and KXMITI conducted research on the development of push-pull tillage machines and substantiation of their parameters, which can be used in agricultural production of the country, for tractors of 3-4 classes before and after them. a plug consisting of hanging working parts was developed and an experimental copy of it was prepared and tested [5-7].

This article presents the results of studies on the transverse distances between the front and lower suspension points of the plug parts of the "push-pull" system, the effect of the number of housings mounted on them on its performance.

Styles and materials. Plug developed in tests AXION 850 was aggregated with a tractor.

Results. To carry out experimental research, change the distances between the front and lower suspension points of the AXION 850 tractor and give them the bodies 0 5, 1 4, 2 3, 3 2 (where the first number indicates the number of bodies mounted on the front of the plow, the second number indicates the number of bodies mounted on the back)) an experimental plug capable of installation according to the schemes was prepared [5-7].

Table 1

The effect of the transverse distances between the lower hanging points of the front and body parts of the plug on the push-pull system on its performance

№	Naming of indicators	The transverse distance between the lower suspension points of the plow front suspension device, sm			The transverse distance between the lower suspension points of the plug body part suspension device, sm		
		46	56	66	71	81	91
1.	Work speed, km/h	6,53	6,74	6,38	6,61	6,78	6,43
2.	The total coverage width of the plug: Pipe, see ± s, sm	218,4	226,4	231,2	221,4	227,2	232,9

		6,57	4,48	6,83	6,41	4,23	7,02
3.	Gravity resistance of the plug, kN: general front part part of the organ	 40,9 12,8 28,1	 39,4 14,1 25,3	 42,3 15,7 26,6	 41,4 13,6 27,8	 38,7 13,8 24,9	 42,8 16,3 26,5
4.	Fuel consumption, kg / ha	31,1	29,2	32,7	31,4	28,8	32,1
5.	Basic time productivity, ha / h	1,43	1,53	1,47	1,46	1,54	1,50

Table 2

The results of experiments to study the effect of the number of housings mounted on the front and body parts of the plug in the "push-pull" system on its performance

№	Naming of indicators	Values of indicators according to the scheme of installation of housings			
		0+5	1+4	2+3	3+2
1.	Operating speed, km / h	5,72	6,38	6,67	6,57
2.	Total coverage width of the plug: Pipe, sm ± s, sm	 228,2 4,83	 226,7 4,62	 227,8 4,43	 226,4 4,34
3.	Pulling resistance of the plug, kN: total front part part of the organ	 41,6 0 41,6	 40,3 7,2 33,1	 38,1 13,4 24,7	 36,4 19,8 16,6
4.	Fuel consumption, kg / ha	32,6	30,2	28,4	29,2
5.	Basic time productivity, ha / h	1,30	1,45	1,51	1,49

The data in the tables show that the AXION 850 tractor and the push-pull system consist of the front and body parts of the plug in order to ensure the linear movement of the unit, to achieve high efficiency and energy efficiency.

the transverse distances between the lower hanging points should be 56 and 81 cm, respectively, two bodies should be mounted on the front of the plug and three on the body.

Conclusions, suggestions and recommendations. Based on the research, the following can be noted: the plug in the "push-pull" system designed for aggregation with tractors of 3-4 classes and the plow between the front and lower suspension points of the plow to ensure high linear movement, high productivity and energy efficiency. the transverse distances should be 56 and 81 cm,

respectively, two bodies should be mounted on the front of the plug and three on the body.

References:

1. Юрин А.Н., Китун А.В. Обоснование конструкторско-компоновочной схемы почвообрабатывающе-посевных агрегатов // Материалы Международной научно-практической конференции молодых ученых “Энергоресурсосбергающие технологии и технические средства для их обеспечения в сельскохозяйственном производстве”. – Минск, 2010. – С. 31-36.

2. Тўхтақўзиев А., Мансуров М.Т. Трактор олди ва орқасига осиладиган ишчи қисмлардан иборат тупроққа ишлов бериш машиналари // Агро илм. – Тошкент, 2016. – № Махсус сон. – Б. 85-86.

3. Тухтакузиев А., Мансуров М.Т. Исследование устойчивости трактора с орудиями передней и задней навески против бокового заноса // Тракторы и сельхозмашины. – Москва, 2015. № 9. – С. 34-35.

4. Тухтакузиев А., М.Мансуров. Исследование устойчивости прямолинейного движения трактора с орудиями передней и задней навески // Сборник научных докладов Международной научно-технической конференции на тему “Интеллектуальные машинные технологии и техника для реализации Государственной программы развития сельского хозяйства”. – Москва, 2015. – С. 126-128.

5. Тўхтақўзиев А., Мансуров М.Т. Трактор олди ва орқасига осиладиган ишчи қисмлардан иборат тупроққа ишлов бериш машиналари // Агро илм. – Тошкент, 2016. – № Махсус сон. – Б.85-86.

6. Мансуров М.Т. Ғилдиракли тракторларнинг олди ва орқасига осиладиган ишчи қисмлардан ташкил топган тупроққа ишлов бериш машиналарини агрегатлашнинг илмий–техник ечимлари: т.ф.д. … дисс. – Тошкент, 2018. – 208 б.

7. Мансуров М.Т. Тракторнинг олди ва орқасига осиладиган ишчи қисмлардан ташкил топган плуг параметрларини асослаш // Агро илм. – Тошкент, 2017. – № 5. – Б.101.