

PREPARATION RECOMMENDATIONS FOR THE PROTRACTED STORAGE OF MOTOCULTIVATOR WEIMA 900M

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Abstract: *the analysis of technological operations of preparation is considered to storage of WEIMA 900M. Improved technological process of preparation to protracted storage of motocultivator, due to development of recommendations necessary to implementation. Control the system storage of facilities of small mechanization, which is based on collection and use of database about damages that breakages which arise up in the period of storage of technique, is offered. Due to the developed system, possibility to control the technical state during the period of exploitation appeared.*

KEYWORDS – PREPARATION, STORAGE, TECHNOLOGICAL OPERATION, TECHNICAL STATE, EXPLOITATION.

RAISING OF PROBLEM.

Purchasing a motocultivator a consumer runs into a problem what technological operations for a technique must be executed before its storage, while in instruction of plant manufacturer this information is not presented in general. In these terms the users of facilities of small mechanization need careful description of technological operations which are necessary to do before rising on storage with the aim of charges reduction on maintenance of motocultivator.

AIM AND RESEARCH TASKS.

Aim: increasing of efficiency usage of motocultivators by development of complex of technological operations before rising on storage, sent to maintain in working and good condition all of its knots during the purpose use.

The basic *tasks* of researches are: to analyze the rules of storage of agricultural technique due to GOST 7751-85; to work out recommendations to implementation of technological operations before rising on storage motocultivator WEIMA 900M.

ANALYSIS OF BASIC RESEARCHES AND PUBLICATIONS WHERE THE DECISION OF PROBLEM IS FOUNDED IN.

Review of basic results of researches and publications on given question, showed that the basic requirements to storage of agricultural technique, envisaged by GOST (government standard) 7751-85 [1]. An analysis of the last researches and publications Molodyk M.V., Gykov J.S., Morgun A.M., Makarenko M., Kosachenko O.V. showed that research of reliability of machines during exploitation, technical service, repair and storage, are related to the quality of providing services during all period of exploitation [2-5]. It is possible to draw conclusion on results of the works analysis of leading specialists, that exactly on question of preparation to storage the facilities of small mechanization there is not enough existing information. That's why, for development of technological operations, that is executed before rising on storage, it is necessary to work out a database, that would contain the accumulated information about a damage and disrepairs that arose up in the period of storage and would allow to use her for development of recommendations for effective preparation of facilities of small mechanization to storage.

RESULTS OF RESEARCHES.

In order that a motocultivator worked reliably and long, it is necessary to retain him in the proper state. As a rule, the proprietors of motocultivators treat their "mechanical horses" with enough care and use all necessary facilities that they could spent winter successfully. But it's not always completely successful, first there's not much information about the types of works that must be done before rising on storage, second, conditions are not satisfying, as a result of absence of sufficient area of placement, or coverage. And third, we not always take into consideration some important recommendations.

The general recommendations for the period of exploitation are presented as the extended table 1.

Table 1 - Recommendations to implementation of technological operations before rising on storage of motocultivator of WEIMA 900M.

Operation of technical service	Reasons, remarks
1	2
PROTRACTED STORAGE of MOTOCULTIVATOR WEIMA 900M (interruption in the use for more than two months)	
1.1 Execute cleaning from plant bits and pieces and technological contaminations.	1.1 The surfaces of details can contain sticking of soil, that needs use of special scrubbers and brushes.
1.2 Execute washing.	1.2 Component parts, that forbid water splashes (magneto, relay) is necessary to close by cover or polyethylene tape. The painted surfaces of motocultivator should be washed by the stream of water force-feed 0,3...0,5 MPa, not painted - force-feed to 2 MPa. The surfaces of details can contain leftovers of oils, it is necessary to use

Prolongation of table 1

1	2
	Washing of motocultivator must be executed on the special ground, where is provided neutralization of effluents and washing solutions, or to collect water in a reservoir for defending, filtration and repeated use during the duty washing.
1.3 Execute drying.	1.3 For drying it is recommended to use the compressed air. Whereupon additionally to wipe by dry fabric all surfaces of knots and mechanisms.
1.4 Disconnect a hanging equipment.	1.4 To use supporting prop.
1.5 Set in position that eliminates the involuntary rolling.	1.5 A haste at positioning of motocultivator results in its unsteady position, it is recommended to use antirecoil supports.
1.6 Transfer fuel petcock in its "closed" position.	1.6 Petrol is a self-lighting and explosive substance. Do not smoke and make sure, that next to a fuel there's no fire and sparks.
1.7 Set a motocultivator on supports.	1.7 To provide minimum distance from a terrene to the wheel at 100 mm. To use the special supports that fixates motocultivator in hang up position reliably at least in three points.
1.8 Execute preservation of internal cavities of engine.	1.8.1 Pour out oil from a crank case. 1.8.2 Wash off the oil system by the mixture of 80% of diesel fuel and 20% of agile oil. 1.8.3 For preservation of internal cavities

	<p>of engine use working preservation oil that is agile oil for this engine with addition of 5% of inhibitory additive AKOR-1 (GOST 15171-70). Working preservation oil is prepared at the temperature of agile oil, not lower than 15 °C, and warmed-up additive AKOR-1 - not higher than 60 °C.</p> <p>1.8.4 Use oil that is in a crank case, if it did not work the set term and is not a subject for replacement. Mixture must be carefully mixed. It's forbidden to flow AKOR-1 or other inhibitory additive directly in a crank case, as they stick on walls and has no effect.</p> <p>1.8.5 Inundate preservation oil in a crank case.</p> <p>1.8.6 Start the engine of motoblock on 5...8 min.</p> <p>1.8.7 For preservation of cylinder of engine through opening for the switch candle inundate 30...40 gr. of working preservation oil and scroll a crankshaft during a 3...5 s. Set a candle into place.</p>
1.9 Execute prevervation of internal cavities of reducing gear of transmission.	<p>1.9.1 Pour out oil from the reducing gear of transmission.</p> <p>1.9.2 Wash off the reducing gear of transmission by the mixture of 80% of diesel fuel and 20% of trasmission oil.</p> <p>1.9.3 For preservation of internal cavities of reducing gear of transmission use working preservation oil, that is agile oil for this reducing gear with addition of 5% of inhibitory additive AKOR-1 (GOST 15171-70).</p> <p>Working preservation oil is prepared at the temperature of trasmission oil, not lower than 15 °C, and warmed-up</p>

Prolongation of table 1

1	2
	<p>additive of AKOR-1 - not higher than 60 °C.</p> <p>Use oil that is in the reducing gear of transmission, if it did not work the set term and is not a subject for replacement. Mixture must be carefully mixed.</p>
	<p>It's forbidden to flow AKOR-1 or other inhibitory additive directly in the reducing gear of transmission, as they stick on walls and has no effect.</p> <p>1.9.4 Inundate preservation oil in the reducing gear of transmission.</p> <p>1.9.5 Start the engine of motoblock, switch a transmission and give it to work for 1...2 min</p>
1.10 Execute the sealing-in of all opening, cavities through that atmospheric precipitations can get inside.	<p>1.10 To execute the sealing-in of opening and cavities using lids, corks and chokes of corresponding diameter. The use of fabric is forbidden.</p>
1.11 Take off rubber passes in case of storage motocultivator on outside for over a month.	<p>1.11 After a removal rubber passes must be washed in warm water (in 10 l. of water dissolve 50...100 gr. of soap and 100 gr. of trisodium phosphate), after that they are dried out.</p> <p>Later powder by talc and place in the suspended state on pegs indoors (with relative humidity of 50...70%, air temperature from 5 to 25 °C, daily</p>

	<p>allowance vibrations of not more than 10 °C).</p> <p>Wedge like passes are kepted unfolded on pegs with rounding heads. (by a radius a 100...200 mm)</p>
1.12 Inflict slushing oil on the working surfaces of pulleys and stretched rollers.	<p>1.12 Inflicting slushing oil on the working surfaces of pulleys and stretched rollers is necessary with a brush, covering all surface.</p>
1.13 Clean rubber passes in case of maintenance motocultivator indoors.	<p>1.13 Cleaning of rubber passes should be executed by the solution you can see in p. 2.9.</p>
1.14 Execute unloading of tires motocultivator that is set on supports.	<p>1.14 Pressure is decreased to 70% of working.</p> <p>The surfaces of tires are covered by a beeswax or other protective material in case of storage motocultivator outdoors.</p>
1.15 Execute the external preservation of motocultivator.	<p>1.15.1 Preservation of surfaces is executed according to the requirements of GOST 7751-85, GOST 9.014-78.</p> <p>1.15.2 Execute preparation of surfaces applying protective covering. Places that are damaged by corrosion is necessary to process by the rust converter or by the modifier of corrosion.</p> <p>1.15.3 Clean the surface and inflict paint into damage area.</p> <p>1.15.4 For the external preservation it is recommended to use universal waxen mixtures and polymeric coverage. They protect painted surfaces, unpainted metallic and rubber-textile wares, and details from a plastic. A specialty of these mixtures lay in unnecessarily of</p>

Prolongation of table 1

1	2
	<p>depreservation for beginning of exploitation of motocultivator.</p> <p>1.15.5 Preparation of surface to the external preservation and implementation of preservation must be conducted at air humidity of not higher than 70%, and the ambient air temperature not below + 5 °C.</p>

As evidently from a table 1 the worked out recommendations for implementation of technological operations for storage preparation of motocultivator WEIMA 900M in the personal agriculture give us an opportunity to prolong the term of its the effective usage. On the basis of the accumulated database about malfunctions and failures, for the period of storage, and using a table 1 it is possible to control the technical state of motocultivator during all period of exploitation.

CONCLUSION.

1. Basing of analysis of existent rules of storage of agricultural technique it's set, that for increasing of usage efficiency of motocultivators WEIMA 900M it is necessary to adapt the list of necessary operations of preparation for storage.

2. Offered recommendations on storage of motocultivators give an opportunity to increase shock-absorbing terms of their work up to 25...30%.

3. It is set that violation of rules of storage of facilities of small mechanization reduces their period of the effective usage in 2...3 times.

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