

USE TECHNOLOGICAL PROPERTIES OF AGRICULTURAL MACHINES AND THE BENEFITS OF USING COMPOSITE MATERIALS

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Annotation. The properties of the use of agricultural machines in the implementation of technological processes include: agrotechnical indicators, technical indicators, energy indicators, maneuverability, technical and economic indicators, ergonomic indicators. The most effective means of combating deterioration of engine oil quality is oil filtration. With the help of filters, in addition to the removal of large metal particles and various mechanical impurities in the oil, it can be free of the smallest particles of dust and sediment suspended in the oil.

Key words: Agricultural machines, technical and economic indicators, oil filtration, engine operation, soft cleaning filters, machine resistance

Annotatsiya. Qishloq xo'jaligi mashinalari texnologik jarayonlarni amalga oshirishda foydalanish xossalari quyidagilar kiradi: Agrotexnik ko'rsatkichlar, texnik ko'rsatkichlar, energetik ko'rsatkichlar, manevrchanlik, texnik-iqtisodiy ko'rsatkichlar, ergonomik ko'rsatkichlar. Dvigateldagi moy sifati yomonlashishiga qarshi kurashning eng samarali vositasi moyni filtrlashdir. Filtrlar yordamida moydagi yirik metall zarrachalari va har xil mexanikaviy aralashmalarni yo'qotishdan tashqari, moyda muallaq holatda bo'lgan eng mayda chang va cho'kma zarralaridan xoli bo'lishi mumkin.

Kalit so'zlar: Qishloq xo'jaligi mashinalari, texnik-iqtisodiy ko'rsatkichlar, moyni filtrlash, dvigatel ekspluatatsiyasi, mayin tozalash filtrlari, mashinalarning qarshiligi

Аннотация. К свойствам использования сельскохозяйственных машин при осуществлении технологических процессов относятся: агротехнические показатели, технические показатели, энергетические показатели, маневренность, технико-экономические показатели, эргономические показатели. Наиболее эффективным средством борьбы с ухудшением качества моторного масла является фильтрация масла. С помощью фильтров, помимо удаления из масла крупных металлических частиц и различных механических примесей, оно может быть освобождено от мельчайших частиц пыли и взвешенных в масле отложений.

Ключевые слова: Сельскохозяйственные машины, технико-экономические показатели, фильтрация масла, работа двигателя, фильтры мягкой очистки, стойкость машины.

Features of use of agricultural machines

The features of agricultural machines in the implementation of technological processes include:

1. Agrotechnical indicators - these describe the ability of the aggregate (equipment) to perform technological activities in accordance with agrotechnical

requirements and regulations. For example, plowing depth, damage to crops and seeds, etc.

2. Technical indicators - the accuracy of the equipment (strength, durability, suitability for repair, long-term non-destruction, maintainability), as well as other technical dimensions - mass, shape, etc. defines. It is necessary to take these factors into account when planning the technical operation of machines.

3. Energy indicators - describe the energy characteristics of tractors and working machines. An important energy indicator for a tractor is the power on the rope, and for a working machine, it is the energy used for work, i.e. traction resistance.[1]

4. Maneuverability - refers to the flexibility, maneuverability, smoothness of movement, ease of transportation of working bodies. The listed characteristics of the aggregate should be taken into account when choosing aggregates under certain conditions.

5. Technical and economic indicators - machine productivity, required labor cost, economic cost, fuel efficiency, etc. These features include metal and energy consumption.

6. Ergonomic indicators - represent sanitary-physiological conditions of tractors and machines during their work, ease of service, safe working conditions, aesthetic indicators.

The importance of composite materials in the use of tractors and machines

The most effective means of combating deterioration of engine oil quality is oil filtration. With the help of filters, in addition to the removal of large metal particles and various mechanical impurities in the oil, it can be free of the smallest particles of dust and sediment suspended in the oil. Rapid removal of all impurities in the oil not only reduces abrasive wear, but also protects the oil itself from wear. A large number of small particles in the oil have an active effect on wear and friction as large particles. An oil filter is a part of every engine, so special attention should be paid to it during maintenance and repair of cars. If in enterprises and organizations these works are carried out on time by qualified specialists based on the plan, in the case of public cars and agricultural machines, they are carried out based on the owner's financial condition and wishes and may not be carried out regularly. As a result, long-term reliable operation of the engine decreases. Currently, in many automotive countries, important research is carried out on oil and lubricants, oil refining, rational use of existing materials and reduction of costs, and scientific research on increasing the efficiency of cars, including all aggregates and units. works are being carried out. The most effective means of combating deterioration of engine oil quality is oil filtration. With the help of filters, in addition to the removal of large metal particles and various mechanical impurities in the oil, the oil can be free of the smallest dust and sediment particles. Ordinary coarse filters are able to capture 95% of particles with a size of 38-45 μm , and smaller particles pass through the pores of the cleaning barrier into the engine's oil line more or less easily. To prevent this, slotted or centrifugal soft cleaning filters are used in modern engines. After passing through

the coarse filters, the fine cleaning filters thoroughly clean the oil from mechanical particles up to 0.001 mm, and also capture the glued oil and oil soot. In the West, non-woven composites and full synthetic materials are used for cleaning car oils. For example, the outer layer of two-layer composite materials consists of highly absorbent synthetic fibers and paper, which gives the combination high strength. The TTZ-100K.11 tractor is mainly used for agricultural work. One of the main factors for reducing consumption in the use of this tractor is the supply of high-quality oil to the friction parts of the tractor engine. The TTZ-100K.11 tractor is equipped with a 4BTA3.9 "Cummins" engine. installed. If the filter is filled with debris, the oil will go to the rubbing parts without being cleaned, as a result, the wear of the rubbing surfaces will increase and the service life will decrease. It is better if an additional coarse filter is used in the lubrication system of the TTZ-100K.11 tractor engine.

Factors that make up traction resistance of agricultural machines and measures to reduce them

The following factors affect the resistance of machines:

- natural climatic conditions: type and condition of the soil, meteorological conditions, properties of the processed material;

- constructive factors: type, shape and number of working bodies, mass of the machine, type and structure of the walking part. The most important of these factors is the form of working bodies;

- operational factors: technical condition of the machine: level of wear, correct adjustment, quality of lubrication. The main measures are as follows: Constructive: - use of suspension machines, use of low-pressure pneumatic tires, improvement of the quality of working bodies by covering their surfaces with special composite materials, reduction of machine mass.

Operational activities: timely and thorough technical service; correct assembly and adjustment of details of working machines; choosing the most suitable option of action; work when the soil is well matured.

Used literature

1. A.K. Egamberdiev S. Aliqulov "use of tractors and agricultural machines, technical service" Tashkent - 2020
2. Decree of the President of the Republic of Uzbekistan dated 06.27.2020 No. PQ-4760 "On measures to improve the system of testing and certification of agricultural and melioration techniques
3. M. Shoumarova, T. Abdullayev, Kh. Irisov "Structure and maintenance of agricultural machinery" training manual for vocational colleges Tashkent "Publisher" 2017
4. Traditional XVIII scientific-practical conference of young scientists, graduate students and talented students on the topic "Modern problems of agriculture and water management". Collection of articles /Part 2/ Tashkent - 2019