Міністерство освіти і науки України



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INVESTIGATION OF WAYS OF PURIFICATION OF SOILS FROM FUEL AND LUBRICANTED MATERIALS BY MICROFLOOR ACTIVATION

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Actuality of theme. Agricultural production is based on the large-scale emergence of agricultural machines, systems and mechanisms that provide high productivity. Exploitation of the machine-tractor park is connected with the use of large volumes of fuel and lubricants. They need to be stored in special conditions and take care of safe storage and use. The application of storage, use, and transportation of fuel and lubricants may lead to their leaking and pouring. Getting into the environment gasoline and diesel fuel leads to pollution of air, water, soil. There is a threat to the environment, agricultural production. And therefore, there is a need to develop methods for purifying soils from fuel and lubricants, in the event of their pollution, by various means and methods. Purification of soils from fuel and lubricants requires significant material costs. By activating the microflora

of the soil it is possible to biologically disinfect them from gasoline and diesel fuel, as organic ecotoxicants, by decomposing them to non-toxic components.

A measure of our research was to find an efficient, affordable and cheap way of filling the fuel and lubricants to non-toxic components. The most accessible way of activating the microflora is mechanical, which is to increase the flow of air to the ground, and therefore to oxygen. On compressed soils, the air pollution in them decreases. Rubbing, orange, and distillation contribute to increasing the access of oxygen to the soil, and thus the activation of the activity of the microflora. At optimal and high temperature points, the activity of microflora increases. When the air temperature decreases, microflora activity decreases. In order to activate microflora, at low temperatures in the spring, it is advisable to blow the soil with heated air.

Effectively affect the activity of microflora mineral fertilizers, especially nitrogenous. Adding them in optimal doses / N60 P30 K30, N90 P60 K60 / can increase the activity of microorganisms.

Significant influence on the activity of microorganisms has the reaction of soil solution. The neutral medium for biodegradation of fuel and lubricants is optimal. Therefore, to neutralize the soils that have an alkaline reaction, make gypsum, and to neutralize acidic soils - lime. Thus, favorable conditions for activating the microflora and the expansion of fuel and lubricants to non-toxic components by 40-90% are developed.

Conclusion. The results of our studies have shown that with the help of activation of microflora can significantly reduce soil contamination by fuel and lubricants. The degree of compaction of the soil affects the flow of oxygen to it, the improvement of temperature conditions and mineral nutrition, which positively affects the decomposition petrol and diesel fuel. Mineral fertilizers in optimal doses, as well as the neutral reaction of the soil mean, promotes increased activation of microorganisms and the disintegration of fuel and lubricants to safe components.