PRIMARY SOIL TREATMENT AND BIOSOLVENT APPLICATION IN HEAVY AND MEDIUM SALT SOILS

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Abstract: *Simultaneously with plowing on a poor ameliorative condition of strong and moderately saline soils, in the subsoil layer and on the plowed surface, a mixture of biosolvents is sprayed by mixing 5 liters of a mixture of biosolvents with 195 liters of water to spray on 1 ha of land. At the same time, soil porosity increases, conditions are created for easy removal of harmful salts from the soil, which leads to a decrease in water consumption up to 2-3 times. As a result, water is saved and land productivity is increased by 10-12%*

Keywords: *tractor; capacity; water taps; water manometer; pump; water pipe; filter; water; biosolvent; the soil; amount of salt.*

This article presents data on the use in the field of agricultural mechanization, in particular, the introduction of a biosolvent preparation consisting of ionic polymers and surfactants and allows you to quickly and easily wash out toxic, sparingly soluble salts from the soil layers and the use of a biosolvent reduces water consumption and soil salinity by 2- 3 times and as a result, soil fertility and its porosity increase. The yield in the areas washed with biosolvent was 1.4-1.5 times higher. For 1 hectare of saline land, 5 kg of biosolvent will be required. In this work, simultaneously with plowing on a poor reclamation state of strong and moderately saline soils, in the subsoil layer and on the plowed surface, a mixture of biosolvents is sprayed by mixing 5 liters of a mixture of biosolvents with 195 liters of water to spray on 1 hectare of land.

Wherein soil porosity increases, conditions are created for easy removal of harmful salts from the soil, which leads to a decrease in water consumption up to 2-3 times. As a result, water is saved and the productivity of the land increases by 10-12% [1,3].

It is known that in many regions of the country in the autumn-winter season, soil leaching is often carried out to remove harmful salts from the soil. In recent years, a

proposal has been made to use a soil flushing agent with biosolvents (Biosolvents). But to introduce this perparat into the soil

before plowing, and before washing the soil, there is no mechanized equipment. Therefore, we have developed tools for reversible plows equipped for spraying a biosolvent preparation (biosolvent). In this regard, the closest to this unit is the sprayer units. These units are divided into two groups according to the principle of operation [2]' hydraulic and fan.

Hydraulic unit sprayer while working formed sprays by kinetic energy under hydraulic pressure or under the action of an air flow sprays in simple trinity or simultaneously hydraulic and pneumatic sprayer bubbles under the air pressure of a fan.

The fan assembly sprayer also sprays while working under hydraulic pressure, forming bubbles above the ground.

The hydraulic unit of the sprayer can be divided into rod, hose, drum nails, injector and others.

Horizontal barbell (application 1.160-figure, a) on the field is solid the plants of melon, vegetables, etc. are exposed.

The disadvantages of these aggregates are not intended for taking out under arable land and over arable land for spraying the preparation of a biosolvent (biosolvent) before washing the soil. Therefore, we propose a new implement device for reversible plows during the ploughing, spraying under plowing to the depth of turning the soil layer and from above the ploughing (Pictures 1,2, 3 and 4).

The unit consists of the main parts: high-power tractor CASE PUMA 210 (New) with engine - FPT NEF L-6 6.7 l. (with turbocharging), power 210 hp / 157 kW, suspension type - three-point, maximum load capacity - 5800 kg, chassis 4x4, steering gear - hydrostatic, gearbox - 18/6. Front tire parameters - 16/9R30, rear tire parameters - 20.8R42, Weight - 7125 kg. Fuel tank - 439 l. Wheel base - 2880 mm. Warranty: 12 months: uz: Designed for smooth plowing to a depth of up to 27 cm, old-arable poorly and medium stony soils, with resistivity up to 0.1 MPa [3].

Technical characteristics of the plow Lemken Europal 7: plow body 4+1, Tractor power (hp) -90-160, (KW) 66-118, Weight (kg) 1175, working width 33, 38, 44, 50 (cm), furrows 4+1, Distance between bodies in (cm) 100

Basic equipment of the plow Lemken Europal 7 [4]:

- equipped with hydraulic turning device E 100;
- at the heart of the design
- a square profile frame 120 x 120 x 10 mm;
- a double-acting turnover cylinder is installed on the plow;
- Optiquick plow adjustment system installed;
- linkage shaft cat. 3N=L2 Z3;
- plow frame height is 80 cm;
- the plow is completed with a box with tools;

– divided share/share point (or solid share for stony soils with welding);
– welded tip of the plowshare;
– support stand.

The developed sprayer for the reversible plow plow (Lemken Europal 7) is designed for spraying the biosolvent preparation (biosolvent) and consists of the following units (Figures 1,2,3 and 4): Tank -1 (Water tank) -200 l, central pipe-2 with a diameter of 20 mm, valve -3, pump-4, monometer-5, distributor-6, filters-7, main pipes-8, distribution pipes 9, pipes for housings-10, sprinklers-11.

Principles of operation of this unit 5 kg (5 liters) of biosolvent are added to 200 liters of water for spraying on 1 ha of saline subarable land and above lust.

"Device for introducing a biosolvent overdose before soil leaching" consists, the frame of the unit, the support wheel, the gyro-cylinder for the rotation of the plow bodies, skimmers, plow blades, which *are distinguished by the fact* that from the tank (water tank) the water pump sucks the biosolvent preparation through the filter through the main pipe and sprays the subfloods and from the top of the plowing, the reparation consisting of ionic polymers and surface active substances and allows you to quickly and easily wash out toxic, sparingly soluble salts from the soil layers and the use of a biosolvent reduces water consumption and soil salinity by 2-3 times, and as a result, soil fertility and its porosity increase. The yield i n the areas washed with biosolvent was 1.4-1.5 times higher. For 1 ha of saline land, 5 kg of biosolvent will be required [8,10].

Task: For washing heavily and moderately saline soils with the removal of a biosolvent (biosolvent) solution, it reduces water consumption and soil salinity by 2-3 times and, as a result, soil fertility and its porosity increase.

The yield in the areas washed with biosolvent was 1.4-1.5 times higher. For 1 hectare of saline land, 5 kg of biosolvent will be required. Plowing is carried out with a converted plow device for spraying in the lower part of the plowed area (subplowed area), and on top of the plowed area. The unit is equipped with developed sprayers for a reversible plow plow (Lemken Europal 7) i s designed for spraying a biosolvent preparation (biosolvent) and consists of the following units: Tank (Water tank) -200 l, central pipe with a diameter of 20 mm, valve, puonp, meter, distributor, filters, main pipes, distribution pipes, pipes for housings, sprinklers for venezeniya pererata

1-frame suspension; 2 - gyrocilin, for turning plow bodies; 3-split cases; 4- base wheels; 5- frame; 6 - front small buildings; 7 dumps; 8-plowshares.

Picture 1. Field unit for applying a biosolvent overdose prior to soil leaching.

Picture 2. Field installation of a unit for applying a biosolvent overdose before washing the soil.

Necessary materials (equipment): 1. Plastic pipes: - length - 30 m; - diameter -0.25 m; 2. Sprayers - 24 pcs.; 3. Filters - 2 pcs.; 4. Trinik (triplets) - 40 pcs.; 5. Cork - 16 pcs.; 6. Pump - 1 pc.; 7. Cistern (Yiddish) 200 liters - 2 pcs.; 8. Distributor (distributor) - 1 piece; 9. Corner for the base frame of the tank (container) 7x7-30 m; 10. Fasteners for fixing plastic pipes (1 packing - 50 pieces); 11. Double-layer 4-body swivel fork 12. Heavy duty tractor brand (CASE-210).

The biosolvent preparation consists of ionic polymers and surfactants. The biosolvent drug allows you to quickly and easily wash out toxic, sparingly soluble salts from soil layers into plants. The use of Biosolvent reduces water consumption and soil salinity by 2-3 times. As a result, soil fertility and its porosity increase. The yield on the plots washed with Biosolvent was 1.4-1.5 times higher. 1 ha of saline land will require 5 kg.

Biosolvent. The need of agriculture of the republic in biosolvent is 2000 tons. The effectiveness of the Biosolvent preparation i n overcoming the consequences of salt storms in the Khorezm region and the Republic of Karakalpakstan has been proven. The drug, developed by scientists from the Institute of Bioorganic Chemistry of the Academy of Sciences of Uzbekistan, is currently at the stage of commercialization by the Ministry of Innovative Development of the Republic of Uzbekistan. The biosolvent leaches soil salt 2-3 times more than ordinary water, and reduces water consumption for soil leaching by 1.5-2 times. This preparation improves the mechanical composition of the soil, increases the porosity by 2-3 times and increases the yield from 7 to 10 centners [10].

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