



SYNTHESIS OF WATER SOLUBLE POLYMERS

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Abstract. Polymer - a substance formed from the interconnection of monomer molecules of submolecular substances, if the molecule contains one or more active functional groups. The article presents the investigation of water soluble polymers. The results of the research depict that water soluble polymers are important in agriculture.

Keywords: polymers, water soluble polymers, characteristics, analysis, types.

Polymers are high molecular compounds with a chain structure, their molecules are connected by chemical bonds and consist of many repetitions of atomic groups[3]. These are the large energy of interaction between chains of macromolecules, which consists of the sum of the energy of covalent bonds in the chain, and leads to the formation of one- and two-dimensional systems oriented at the level of ordinary matter and physical bodies. Therefore, only fibers and films can be obtained from polymers.

These are diffusion coefficients that are several times less than that of macromolecules, which leads to a new, uncharacteristic dissolution mechanism for substances in the world of submolecular substances - they dissolve first (slowly and for a long time) so and it dissolves. Therefore, polymer materials have a high adaptability to changes in the environment, during use, with the preservation of the primary structure and its return to the primary state[4.125-130].

When using water-soluble polymers in the economy and solving environmental problems, it is necessary to know the types of systems in their solutions and the level of systematization. If the solution contains more supramolecular structures (for example, spherulites, lamellae, globules, patches, ribbons), it is used for one purpose, and if it has a spherical spatial system, it is used for another purpose.

For example, if a bucket of cloudy water needs to be diluted, it is advisable to use the first type of system, and to increase the turbidity stability, it is appropriate to use polymer solutions with the second system. In the given example, the freezing of water is called system formation or coagulation in dispersed systems. Fighting against water stagnation is called dispersion system stabilization. The stabilization process is used in oil and gas exploration, drilling, and clay mud preparation.

Disperse systems are widely used to improve soil productivity, water purification, and granular fertilizers. When diluted polymer solutions are sprinkled on the soil, they combine and form a polycomplex - soil crust. This layer protects the soil from wind and water erosion, provides sufficient moisture level, improves soil composition, prevents soil compaction, favorable conditions for seed germination and further development increase the productivity of granular soil.

It should be noted that if polycomplexes are obtained from naturally strong polycomplexes (or the concentration of the polymer in water is greater), their binding properties are

enhanced, preventing salt and sand particles from flying away under the influence of the wind, that is, they are absorbed by the soil. and sand can be used as a covering material[5.45-56].

And polycomplexes obtained from weak polyelectrolytes in nature form a fertile system in the soil. Polecomplexes MT-1, MT-2, MT-3, MT-4 made from natural substances or synthetic materials that replace fertilizers with an extended shelf life serve as nutrients for the soil when decomposed.

The use of these polycomplexes produced in our republic, obtained from oligomers and polymers containing nitrogen, in cotton cultivation creates favorable conditions for the growth of seeds, allows to obtain 4-6 centners more from each hectare of land and solve many environmental problems.

The use of water-soluble polymers in cotton cultivation has the following advantages over other methods:[1.235-242].

1. It allows to increase water retention of gray soil from 5-8% to 85-95%.
2. The composition of the soil improves, and the temperature in its upper layer (0-10 cm) can increase up to 1-2°C.
3. The resulting soil - polymer film (shell) does not allow evaporation of moisture in the soil.
4. Such a layer reduces the heating of the soil due to the influence of the Sun's rays during the day and its cooling due to the emission of infrared light at night, allowing to keep the average change of the soil the same during the day.

For spraying solutions of polycomplex or polyelectrolytes, 2 tanks are installed on the rear frame of a simple tractor. To spray the solution on the soil, it is necessary to improve the device for spraying herbicide solutions. Another advantage of the layer formed on the soil is that after a certain period of time, it decomposes under the influence of sunlight, improves the technological properties of the soil, and acts as a fertilizer with an extended period of action. .

In addition, this layer increases seed fertility by 5-10% and allows less seed consumption. Seedlings planted under polycomplex soil germinate 3-5 days earlier, opening of pods accelerates up to 5-8%, and productivity increases by 4-5 centners per hectare of land in the first harvest. The most important thing is that it does not affect the ecology of the soil, improving irrigation works and creating favorable conditions for the development of plants.

It is known that the soils of Uzbekistan have the characteristic of creating a crust. Soil particles formed with the help of water-soluble polymers are stable in relation to water and do not form lumps. They do not disperse (disintegrate) under the influence of water, because the water-soluble polymer dries on the soil particles and becomes insoluble in water. One should not draw the wrong conclusion from this, i.e., that the soil prepared with the help of such polymers absorbs less water. On the contrary, if an artificial system is formed in the soil, the demand of the land for water will increase, and after irrigation, the soil will retain moisture longer.

Soil treated with polymer absorbs more water than normal soil, because the polymer layer has a higher demand for water. As a result, artificially structured soil particles are stable in relation to water. It is also worth noting that the water-absorbing polymer film has the ability to re-release moisture and absorb water again. Therefore, the artificial system of the created soil can be preserved for 3-5 years. Only after water saturation, the polymer film can lose its ability to hold soil particles. As a result, the film disintegrates (dissolves) under the influence of water and the soil particles are crushed (dispersed).

Conclusion. Currently, it is easy to make materials from polymers, which are considered a new material, and their physical, chemical and mechanical properties facilitate processing. Machine parts and toys made of polymer materials, films and powder casings, knitwear and household goods, shoes, makeup and decorative items, such as fine and delicate materials, strong and durable, lightness, heat and cold resistance, light. and it is distinguished from wood, glass, metal, etc. by its resistance to any weather, non-electricity, resistance to alkali and acids and other properties.

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