EFFECT OF MICROWAVE RADIATION SEEDS ON PRODUCTIVITY GRAIN CROPS

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The use of toxic chemicals for seed treatment leads to irreparable environmental damage. Therefore, at the present stage of development of agriculture more attention paid to the use of environmentally friendly methods of processing the seed crop to increase yield and improve storage.

Electric high voltage field is one of the most promising means of influence on seed crops. One of the uses of high voltage electric fields are preplant treatment of seeds, processing storage and processing.

The results of modern research shows that the effectiveness of methods of stimulation posiv¬nyh qualities of seeds depends on coordination and technological parameters kons¬truktyvnyh plants and their modes of operation of fiziolohich¬nymy performance and biochemical composition of seeds. First focus electrophysical methods that provide seed processing electromagnetic, ionizing, light, ultraviolet, laser radiation and so on. However, these methods have not acquired industrial use through clear enough reproducibility of the results and the low efficiency in the fight against pathogens seeds, and some are very energy intensive. One such environmentally friendly methods of pre-treatment of seed irradiation microwave field is extremely high frequencies.

The purpose of research - to ensure efficient and energy-saving method of pre-treatment of grain to enhance germination, laboratory germination, plant resistance to disease, increase crop yield due to optimization of radiation seeds preplant major crops microwave field.

Materials and methods research. Radiation seed microwave field (MX) is extremely high frequency (UHF) was performed on laboratory equipment ranging

2,4-2,45 GHz in energy consumption of 0.42 kWh / kg of seeds for 2 to 8 p. Laboratory studies were conducted on seed winter wheat.

Results. It was the effect of biostimulation seeds electromagnetic microwave field MX. At the same time found that irradiation with high dose leads to inhibition of seed germination or death of the embryo. Moreover, the degree of suppression of different samples and seeds parties going on in different ways. Therefore, to improve a particular party seeds need to irradiate it in this mode, which does not cause a significant reduction in germination.

We have tested modes of radiation seeds (0.42 kW / kg seed) of winter wheat for two samples at various time exposure.

As a result, laboratory studies have found that the performance of vigor and seed germination laboratory raised at least hard mode radiation.

Thus, exposure time 4 s to achieve the largest laboratory germination of seeds, which was 90% in the first experiment and 80% in the second, which is 25% higher than the version without irradiation. At time 2 s exposure in terms of similarity observed increase of seed germination by 10%, while its 6 with minor depression or significance level control. Increasing the exposure time to 8 seconds longer leads to a decrease in germination.

The results of exploratory studies have shown that microwave field positive effect on seed germination and makes it possible to bring the state of substandard seeds to conditioned by similarity, which is essential for seed certification. The best mode of winter wheat seed irradiation is the treatment capacity of 0.42 kW per 1 kg of seeds and irradiation time 4 s, increasing laboratory germination and 20% yield respectively. Processing grain mass may occur at some distance from the plant. The proposed electrotechnology favorably with existing ones. It has low power consumption and allows environmentally safe process grain products.