# STUDY OF ELECTRIC FIELD OF HIGH TENSION ON THE SOWN SEED QUALITY AND PRODUCTIVITY OF CEREALS

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In modern society, more and more attention is paid to ecological food. This makes the development and implementation of environmentally sound methods of processing the seed crops cultivated in order to improve quality, increase productivity and improve storage. More and more attention is paid to physical methods of treatment, including thermal disinfection should be made, using X-ray and gamma radiation, and processing of microwave fields. And despite a number of advantages, energy process and narrow the scope of application prevent the wide introduction of these technologies.

New direction is the use of high intensity electric field, under which, in addition to the electric current passing through the seed and stimulate growth processes, air inclusions in the grain mass occurring partial discharges, accompanied by ionization processes. As a result, in the whole volume of the grain mass, located between electrodes formed ozone, which is known for its antibacterial properties and effective at damaging flora grain.

In processing the grain in the electric field of high tension in order to stimulate growth processes or disposal of surface microflora, seeds, processed, stored in the chamber processing between high-voltage electrodes and is part of the electrode system. Therefore, besides the physical parameters of the grain mass (humidity, temperature), the regime parameters, and therefore the result of processing an impact geometrical parameters (shape and size of seeds).

Seed processing performed on the developed experimental setup.

The facility consists of a high-voltage transformer, voltage regulator, kilovoltmeter milliammeter, camera processing.

For research used three kinds of crops: buckwheat varieties Victoria Soriso grade Odessa 302 millet variety Denvikske.

The study was carried out at 16 ° C air temperature and 68% humidity.

As a result of studies found effective action of the electric field of high tension on seeds of cereals.

From the analysis of experimental data shows that the quit-rents resulting in high electric field intensity increases vigor and laboratory germination of seeds, but of particular note a significant reduction of disease. Disease prevalence of buckwheat varieties Victoria decreased by 2.3 times, Soriso grade 302 Odessa 3.4 times and millet varieties Denvikske 1.3 times. Increased vigor, laboratory germination and reduction of disease effectively influenced the yield of cereal crops. The yield of buckwheat varieties Victoria increased by 10.3%, Odessa 302 Soriso grade 16.6% and millet varieties Denvikske 15.4.%.

Also as a result of laboratory tests found that after seed treatment in an electric field of high intensity it improved crop quality not only in relation to the control, but also in relation to chemical and biological agents used today.

Our studies revealed that as a result of seed treatment of cereals in the electric field of high intensity improved its crop quality, increased vigor, laboratory germination and significantly inhibited disease development. Improving cultivated a positive effect on the yield of cereal crops. Thus, the treatment of seeds in an electric field of high tension yield of buckwheat varieties Victoria increased by 10.3%, Odessa 302 Soriso grade 16.6% and millet varieties Denvikske 15.4.%.