THE DEFINITIONS OF MAGNETIC TREATMENT EFFECT OF SEED CROPS

V. Savchenko, A. Synyavsky, Ph.D.

The general lack of existing methods of electromagnetic stimulation is the lack of instrumental determination of dose treatment. Its optimal value is determined based on the results - the results, which are heavily dependent on the agro-climatic factors, soil fertility, the technology growing so.

Therefore, in determining the optimum magnetic treatment regimes important issue is the indication of the effect that requires scientific study and solution.

The purpose of research - design methodology for determining the efficiency of magnetic treatment of seed crops.

Materials and methods research. Studies have shown that to determine the effect of magnetic treatment would be best to use potentiometric measurement methods.

Since most chemical reactions that occur in seed crops are redox then determine the effect of magnetic advisable for change in redox potential (ORP).

To measure ORP measuring electrode has been developed, which is a platinum plate with the sharp tip of a knife. Platinum electrode is introduced into the germ sprouted seeds. As an auxiliary electrode used standard hlorsribnyy electrode.

Determine the difference ORP (biopotential) and untreated seedlings treated in a magnetic field seeds and compared with the value of the expanded uncertainty of measurement values. If the difference ORP (biopotential) exceeds the expanded uncertainty of measurement that can be said about the influence of magnetic treatment processes that occur in seeds.

Potentiometric measurement uncertainty analysis was conducted on the recommendations of calculating measurement uncertainty.

Measurement uncertainty potential electrode pair advisable to determine the type A for the experimental standard deviation of the mean. By type calculate the uncertainty associated with changes in temperature.

Created by DocuFreezer | www.DocuFreezer.com

Results. It was established that the effect of magnetic treatment will occur when the difference of the measured values of the PLO (biopotential) and untreated seedlings treated in a magnetic field seeds than 2 mV.

Determination of the effectiveness of magnetic treatment of crop seeds held for cucumber varieties "Skvirsky." Seeds of cucumber obroblyuvalosya a magnetic field at different values of magnetic induction and its velocity of 1 m / s. Seeds germinated and measured ORP value (biopotential) seedlings.

It was established that the processing of seeds of cucumbers in the magnetic field increases its biopotential compared with controls. Change biopotential far exceeds its measurement uncertainty. The greatest increases biopotential seed treatment in a magnetic field of 100 mT induction.

Conclusions

Based on the studies found that magnetic treatment effect occurs when biopotential seedling treated in a magnetic field seeds than untreated seeds biopotential 2 mV. The value of magnetic induction the change in biopotential seeds. Established that most biopotential cucumber seeds varies with the magnetic induction of 100 mT. Thus, the effect of magnetic treatment and the optimal mode advisable to determine the change in biopotential seedling seed.