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FEATURES OF HIGH-ENERGY SOURCES IN AGRICULTURAL PRODUCTION electrotechnology

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Recent studies clearly indicate the broad applicability electrotechnologies to improve crop yields, obtaining of plants with improved characteristics inherited. Application electrotechnologies, such as crop makes the possibility of increasing similarities and yield of grain crops (wheat, barley, etc.). 15 ... 20%, vegetables (tomatoes, cucumbers, carrots, etc.). 12 ... 18%.

The purpose of research - analysis of current high-voltage sources that are used in electro-technological processes of various industries, and based on the determination and formulation of requirements to them taking into account the specificity of agricultural production.

Materials and methods of research. Today there is a variety of high-voltage release distribution sources (Germany, of and, the US, Japan and others.).

Depending on the required output voltage and power at work (corona) electrode using one- or two-phase circuit voltage multiplication, while high-voltage transformers operate at a frequency or network powered by high-frequency transformers electricity.

Our research found that processing parameters, their influence on biological objects, primarily determined by the technological purpose of a treatment.

In applying electrotechnologies during storage of plant products, and especially aeroionization (artificial air ionization), the main parameter is the concentration of ions on the surface of the object processing.

In applying electrotechnologies in processing plants of fertilizers, the root and foliar feeding nutrient solution, the effectiveness of creating favorable conditions for the development of plants is determined by such parameters as the velocity of particles corresponding solutions in the interelectrode space (distance between corona electrode and object processing, including and on the back, spreading and absorption rate of surface solutions).

Conclusions.

1. Development of high voltage sources should provide coefficients to improve energy conversion efficiency (efficiency) to 85 - 95%.
2. The output voltage should be regulated in the range 20 ... 75 kV at rated power source to 1kW and a coefficient ripple <1%.
4. It is necessary to reduce the size and weight of the high source, especially when using high frequency, and primarily through magnetic.