

The influence of the magnetoplasma install on growth parameters of sunflower *Helianthus annuus* L

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Abstract

The study assessed the impact of magnetic plasma installation *YMPO-2* on sunflower seeds treated with petroleum products of different concentrations (0.5%, 0.9%, 2.9%, 4.7%). The plant generates a gradient magnetic field with variable induction from 50 to 300 GS and is equipped with a powerful source of UV radiation with a wave range of 248-340 nm, which has a strong bactericidal effect, and the magnetic field is able to activate vital processes in seeds. The analyzed parameters of sunflower: seed germination (total and daily), growth energy and length of seedlings. The positive effect of the gradient magnetic field, ultraviolet radiation and ozone, created by a powerful magnetic inductor, was revealed due to the observation of sunflower growth parameters for 30 days. Under the influence of *UMPO-2* increases the permeability of cell membranes, resulting in changes in the concentration of substances in plant cells, increases the rate of chemical reactions and increases water absorption of seeds. According to the results of the experiment, the stimulating effect of the magnetoplasma installation on germination, growth energy and length of seedlings was noted not only on healthy sunflower seeds, but also on seeds treated with petroleum products in four different concentrations (0.5%, 0.9%, 2.9%, 4.7% kerosene). When germinating seeds with the addition of kerosene to the substrate, the deterioration of agrochemical properties of the soil was noted, as a result, the growth of stems and other vegetative organs of sunflower was delayed. However, the seeds with added oil, treated with magnetic plasma installation *UMPO-2*, germinated together, the growth delay was noted slight. Also, after the impact of *UMPO-2* on seeds not treated with petroleum products, positive dynamics of growth within 30 days, maximum germination and germination energy were revealed.

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