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Study of the influence of oil products on growth parameters and the development of the rhizome of sunflower seeds *Helianthus annuus* L.

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Abstract

The effect of oil products on such parameters of the germination of sunflower seeds of the ordinary *Helianthus annuus* L. as an energy of germination of seeds, the germination of the seeds, the total germination, the length of the seedlings, the development of the rhizome are estimated. Assessment of the toxic effects of petroleum products on the components of agrophytocenosis in this work was carried out by germination of oil-treated sunflower seeds and observation for seven days. Based on the results of the experiment, the negative impact of oil products on growth parameters and the stimulating effect on the development of the rhizome are noted. The germination of seeds with the addition of kerosene to the substrate, the agrochemical properties of the soil deteriorated, as a result the growth of stems and other vegetative organs of sunflower is delayed. When the soil is contaminated with oil products, its physicochemical composition changes, so that the amount of carbon in it sharply increases, but the soil property as a nutrient substrate for plants deteriorates; soil capillaries are filled with oil and hydrophobic oil particles make it difficult for moisture to reach the plant roots, which leads to their physiological changes; the phytotoxicity caused by the development of micromycetes producing toxins in it is increasing and is ultimately accompanied by a strong negative effect on plants. The stimulating effect of a noncritical concentration of kerosene on the root system is confirmed by the elongation of the rod root system with many branches – multiple secondary roots and rootlets, which allows water and nutrients to be absorbed from a larger volume of soil, including those not exposed to toxic petroleum products.

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