

## Analysis of branching of sunflower roots under the influence of external factors

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### Abstract

Oil is an environmentally hazardous substance of class 3 (moderately hazardous substances). However, during transportation, oil is classified as hazard class 1 and 2 (extremely hazardous and highly hazardous substances), since during transportation of oil and oil products there is a likelihood of spills of hazardous substances as a result of an oil pipeline breakdown, emergency wagon-tank wagon derailment during transportation by rail, oil tanker wrecks and accidents. Getting into the soil, soil microflora degradation occurs, respiratory processes are disrupted and the composition of humus and soil microorganisms changes. Hydrophobic compounds are especially dangerous for the roots of plants, which impede the flow of moisture and nutrients. The experiment of germination of sunflower seeds using various external factors, such as oil pollution in different concentrations (0.5%, 0.9%, 2.9%, 4.7%) and pre-processing of the gradient magnetic field. Magnetic field treatment was carried out with the help of a small-sized magnetoplasmic unit UMP-2. Comparative analysis of the root system of sunflower was carried out after germination in rolls of filter paper, planting of germinated seeds in universal soil for 30 days of plant growth. The obtained data indicate the stimulating effect of the magnetic field not only on the germination and growth parameters of plants, but also on the root system.

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