RESEARCH CONCERNING THE INFLUENCE OF SEWAGE SLUDGE USE ON SUNFLOWER PLANTS GROWTH

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SUMMARY

Urban and industrial development of localities, inclusive the general enhance of population standard, involves the production of higher and higher quantities by residue, from street and industry, that requires big outlay for gathering and neutralizing to prevent the environment pollution. The elimination of residual products, without affecting the environment, constitutes one of major preoccupations for researchers from all fields.

To evaluate the influence of sewage sludge application in soil has been organized experiments in the Green House of I.C.P.A. Bucharest, using the sewage sludge sampled from the Wastewater Treatment Station of Pitesti. The experiments were achieved using a soil sample from an Ao horizon of a luvisol.

The experimental model chosen was a bifactorial one (7x2), the two studied factors were: A factor – sewage sludge fertilization, with 7 degrees representing equivalent dozes varying between 0-600 kg N/ha and B factor – mineral fertilization (NPK), with the following degrees: b1 - N0P0K0 and b2 - N100P100K100.

According with the chemical indicators can be assert that the sewage sludge sampled from the Wastewater Treatment Station of Pitesti has all the characteristics assessed by the Order of the Minister (MAPAM) no. 344/2004 regarding its use on agricultural lands.

Chemical composition shows that the sewage sludge represents an important source of organic matter (organic carbon 27%) and nutritive elements for agricultural soils (N\text{total} – 24%, P – 0,77%, K – 0,39%).

The application of sewage sludge lead to a good growth statistically assured by plants waist, calathidium mass, but also azote, phosphorus and potassium content from plants and calathidium. Also, significant statistical growths were recorded in the case of copper, manganese, zinc and cadmium content from plants and calathidium, without existing the reducing risk of the quality.

In conclusion, could be considered that the sewage sludge fertilization in equivalent dozes till 600 kg N/ha did not produce excessive accumulations of metals in plant or nutrition disorders.

References