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INFLUENCE OF BIOGAS DIGESTATE, WOOD ASH AND THEIR MIXTURES ON THE YIELD AND QUALITY OF CUCUMBERS

Aleksandrs ADAMOVICS
Irina SIVICKA

Latvia University of Life Sciences and Technologies, Jelgava, Latvia

The biogas digestate can be an alternative of synthetic fertilizers in agricultural practice. Without additives, the drying of digestate can be unprofitable. The addition of wood ash to digestate dehydration process gives the opportunity for soil liming as well as for soil enrichment with nutrients. Within the framework of a Latvian National Research project, it was necessary to compare digestates from various raw materials and to test the possibility of mixing them with ash for using in cultivation of fast-growing crops. The research aimed to evaluate the influence of biogas digestate and wood ash on the yield and quality of cucumbers in a polycarbonate greenhouse.

The experiment was performed in 2020, using 11 fertilization treatments as well as peat (pH KCl 5.5) as the control. In the start of the experiment, no significant differences in the acidity of substrates was observed, but at the end of the investigation, pH KCl varied from 6.8 till 7.5, that was non-optimal for cucumbers growing. The development of plants under the different treatments was not significantly different ($p>0.05$).

During the experiment, cucumbers were harvested 23 times. The count of fruits per plant, depending on the treatment, per each harvesting varied from 1 till 9 (maximum result was observed for the digestate from pig manure and horse manure). A significant effect of fertilization treatment to cucumbers yield was observed ($p <0.05$). The organoleptic parameters were not differed significantly throughout the growing season ($p>0.05$).