

Ján Brindza<sup>1</sup>, Marián Miko<sup>1</sup>, Jana Šimková<sup>1</sup>, Vladimíra Horčinová Sedláčková<sup>1</sup>, Olga Grygorieva<sup>2</sup>

<sup>1</sup> Slovak University of Agriculture in Nitra, Slovak Republic, Institute of Plant and Environmental Sciences, Faculty of Agrobiological and Food Resources

<sup>2</sup> M.M. Grishko National Botanical Garden at the National Academy of Sciences of Ukraine

## EFFECT OF ACTIVATED WATER CREATED BY THE IPS PREMIUM ACTIVE EQUIPMENT AT DIFFERENT FLOW PRESSURES ON SOME MORPHOLOGICAL TRAITS OF HEMP (*Cannabis sativa* L.)

**The aim of the experiment** - to determine the effect of activated water created by the IPS Premium Active equipment at 12 water flow pressures on the forming of basic morphological plant parts of the hemp *Cannabis sativa* L.. **Materials and methods** - for water activation we used the IPS Premium Active equipment, which was created by MERCI-M in Slovakia. The equipment ensures water activation using galvanization. We ensured the preparation of water samples at different flow pressures on the equipment developed by the research team. In the experiment, we tested activated water created from tap water (fw) at 12 pressures (Pa), namely 5 Pa, 10 Pa, 15 Pa, 25 Pa, 50 Pa, 75 Pa, 100 Pa, 200 Pa, 300 Pa, 400 Pa and 450 Pa. For testing the samples, we used the seeds of the plant *Cannabis sativa* L. (Cs), which grew in greenhouses during the period from August 24th 2021 to October 13th 2021 in Nitra. The control variant in the experiment was water obtained from the tap water without activation. **Results** - Plant weight increased from the application of water obtained at 5 Pa to 25 Pa compared to the control variant (Cs-C). At other pressures, the effects were manifested by decreasing or increasing the weight of the plants. We recorded the highest plant weight after the application of water obtained at 300 Pa. We noted a significant increase in plant length only after applying water obtained at 10 Pa, 100 Pa, 300 Pa, 400 Pa and 450 Pa. We noted an increase in the weight of fresh leaves with stems only after the application of water obtained at 5 Pa, 10 Pa, 15 Pa, 25 Pa, 300 Pa and 450 Pa. At the other pressures of 50 Pa and 200 Pa, we noted a significant reduction in the weight of the fresh leaves. **Conclusions** - Due to the small number of experiments, we do not know the reasons for the significant differences between the tested activated water samples.

