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## PLASMA ACTIVATION OF NUTRIENT MEDIUM FOR MICROCLONAL REPRODUCTION <sup>\*)</sup>

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The use of low-temperature gas discharge plasma in agriculture is developing on a large scale. The active forms of oxygen and nitrogen formed when the liquid is exposed to it can intensify plant growth, as well as help in the fight against phytopathogens. Some of the key and easily reported long-lived forms are  $H_2O_2$ ,  $NO_2^-$ ,  $NO_3^-$ .

This work deals with the effect of a plasma source based on a piezotransformer [1] on a nutrient medium (agar). This medium is used in microclonal reproduction in the production of healthy plant planting material.

We measured concentrations of hydrogen peroxide, nitrite and nitrate ions as an assessment of plasma exposure (Fig.1a, b). Treatment of uncured agar before planting plants in it was carried out for 2.5-7.5 min, varying the volume of the treated solution 20-40 ml. The concentrations were measured at 70°C using spectrophotometric methods (FOX and Griess) using absorption spectra (at wavelengths of 560 nm and 525 nm, respectively)

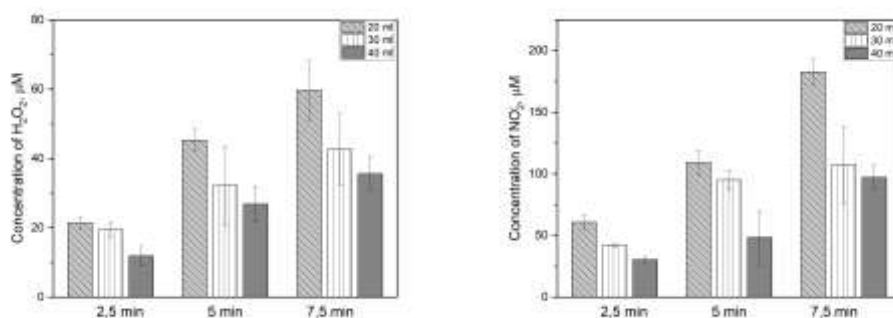


Fig.1. Dependence of hydrogen peroxide concentration (a), nitrite ions concentration (b) on time of exposure to plasma source and volume of treated liquid

### References

- [1]. L.V. Kolik et al. Study of characteristics of the cold atmospheric plasma source based on a piezo transformer. Russian Physics Journal, Vol. 62, No. 11, March, 2020.

<sup>\*)</sup> [abstracts of this report in Russian](#)