

# THE EFFECT OF COLD PLASMA OBTAINED IN VACUUM ON *TRITICUM AESTIVUM* L.

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## Abstract

Seeds of *Triticum aestivum* L. were exposed in cold plasma obtained at low pressure (vacuum) for 2, 3, 5, 10, 20 and 40 minutes respectively, resulting six experimental variants which have been compared with the control ones. After that they were putted to germinate in laboratory conditions, using Petri dishes on double filter paper. The dynamic of germination and the growth in length of the roots and the sheets of the plantlets was monitorized during the first phenophase. Ten days after exposure to the cold plasma, the content of photosynthetic pigments has been obtained spectrophotometrically. The germinative response of the wheat seeds showed no differences between treatment variants regarding to control variant. We can specify that the seed used in this study had a maximum native germinative potential because they are produced in the earlier year. Our results show that a negative correlation exists between the root length and the exposure time in cold plasma. The same behavior has been registered for the sheet length of the plantlets. Regarding the photosynthetic pigment content surprising is the fact that, after a decrease at two minutes of exposure, a slow increase for 5 and 10 minutes is registered. After that the decrease of photosynthetic pigment content for the last time exposures is emphasized. These results suggest the fact that cold plasma obtained in vacuum affects both the root length and the sheet length, while the photosynthetic pigment content shows an accommodation to the stress produced by the first exposure. Therefore for the higher time of exposure, the content of these pigments follows the behavior of the other studied quantities.

**Key words:** seeds, plantlets, photosynthetic pigments, cold plasma