

INFLUENCE SOURCES OF LIGHT ON SELECTED PHYSIOLOGICAL PARAMETERS OF TOMATO PLANTS

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ABSTRACT *The effect of the type of light source on selected physiological parameters of tomato plants. For the study there was taken two cultivars of greenhouse tomato: 'Admiro' F1 – medium-sized fruit and 'Starbuck' F1 – large size fruit. The experiment was conducted in two phytotron growth chambers. One of them was equipped with metal-halide lamps (MH) which the distribution of emissions was optimized for photosynthesis, a second one was equipped with a sodium lamps (HPS) as standard equipment of phytotron chamber. Gas exchange parameters of plants and chlorophyll and dry matter content in tomato leaves were studied. HPS lamps lighted plants were characterized by a higher rate of photosynthesis than MH lamps lighted. Indicators of plant gas exchange such as the intensity of transpiration, stomatal conductance and quantum yield were higher in plants exposed on MH light than under HPS lamps. MH lamps irradiation resulted in a greater accumulation of chlorophyll in the leaves of tomato. Significantly more dry matter was in tomato leaves under HPS lamps than under MH.*

Keywords: *irradiation of plants, photosynthesis, chlorophyll, dry matter, MH lamps, HSP lamps*