

EFFECT OF SUPPLEMENTARY LIGHTING
TOMATO SEEDLINGS METAL-HALIDE
AND HIGH PRESSURE SODIUM LAMPS
ON SELECTED PHYSIOLOGICAL PARAMETERS
OF PLANTS

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ABSTRACT *The effect of metal-halide (MH) and high pressure sodium (HPS) lamps supplementary lighting on selected physiological parameters of tomato plants seedlings were evaluated. For the study there was taken two cultivars of greenhouse tomato: 'Admiro' F1 – medium-sized fruit and large size fruit 'Starbuck' F1. The study was conducted in the greenhouse where the average daily solar radiation was 305 Jcm^{-2} . Plants were lighted for 16 hours per day, half of plants with 400 W MH lamps which spectrum was optimized for plant photosynthesis response and half with HPS lamps (GE Lucalox 400 W). Gas exchange parameters of leaves, chlorophyll and dry matter content in leaves were studied. Plants lighted with HPS lamps were characterized by higher gas exchange rate than ones lighted with MH lamps. MH lamps usage resulted larger amount of chlorophyll in leaves of 'Admiro' F1 in comparison with the HPS lamps. Significantly more of dry matter was in leaves of both tested cultivars when lighted with MH lamps comparing to HPS.*

Keywords: *photosynthesis intensity, chlorophyll, dry matter, metal halide lamps, HPS lamps*