

EFFECTS OF SUPPLEMENTAL LIGHTING  
USING HIGH PRESSURE SODIUM LAMPS  
AND LED LAMPS ON SELECTED GROWTH  
PARAMETERS OF BEDDING PLANTS

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**ABSTRACT** *Rooted cuttings of fuchsia 'Beacon' and iresine 'Shiny Rose' were cultivated in greenhouse during winter months (November, December). Supplemental lighting was applied from 6 do 18 using High Pressure Sodium Lamps (HPS, 400 W) or LED lamps (DAPLON-plus/2011, model elaborated in Electrotechnical Institute, Warsaw). Lamps were switched off when natural irradiation was higher than 200 W m<sup>-2</sup>. Control plants were grown in natural light conditions - without supplemental lighting. For both treatments with supplemental lighting light intensity on plant canopy was 150-190 μmol m<sup>-2</sup> s<sup>-1</sup>. The growth parameters (plant height, branching, fresh and dry weight) were evaluated after 6 weeks of cultivation in greenhouse. Obtained results showed that both bedding plants iresine and fuchsia grown with LED lamps were more compact, with shorter side shoots and with lower leaf area. Fresh and dry weight of iresine and fuchsia were the highest in conditions with HPS lamps. According to expectations the control plants, grown without supplemental lighting, had significantly shorter stems with less side shoots, the lowest fresh and dry weights and the lowest leaf area. Plants grown with supplemental lighting using HPS and LED lamps had higher chlorophyll content in leaves (expressed as CCM and SPAD values), comparing to control plants.*

**Keywords:** *bedding plants, foliage color, irradiance, light emitting diode, supplemental lighting*