Photomorphogenesis and growth of perilla (Perilla ocymoides L.) grown under red or blue LED (light emitting diodes) light source. (C02-choi035904-Poster)

Authors:

- Y.Choi* - *Miryang National University,*
- I.Choi - *Miryang National University*

Abstract:

The role of red,blue LEDs light and broad-spectrum metal halide(MH) with cool-white fluorescent lamps in plant growth and morphogenesis was investigated in perilla grown under approximately 500 uMm-2s-1 photosynthetic photon fluxes(PPF)in red and blue LEDs or 1500 and 2000 uMm-2s-1 PPF in MH lamps. Perilla development under blue LED light under a 16 h day-night photoperiod was similiar in several respects to that of shaded plants, consistent with an important role for blue light photoreceptors in regulation of growth response to irradiance. Significant anatomical changes in stem and leaf morphologies were observed in plants grown under the blue and red LEDs arrays compared to plants grown under the broad-spectrum MH lamp. Red and blue LEDs light was extended leaf length and decreased leaf width. Plant biomass was reduced when perilla was grown under red and blue LEDs compared to plants grown under MH lamps. Especially blue LEDs resulted in taller plants with thinner stem mass than red LEDs and MH lamps. Photosynthetic rate was significantly affected by light source during culture. Higher photosynthetic rate was obtained in higher light intensity, however, red LEDs lights resulted in lower than those grown in blue LEDs light.

Corresponding Author Information:

Young-Whan Choi
Miryang National University
1025-1, Dept. of Horticulture, Miryang Univ.
Miryang 627-130
Korea

phone: 055-350-5394
fax: 055-350-5390
e-mail: ywchoi@arang.miryang.ac.kr

Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 4:00-6:00 pm

Poster Board Number: 1231R

Keywords:
Photomorphogenesis, perilla, light source