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저자
(Authors)

Le Hong Nhung Hoang, Wan Soon Kim

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우수3

Air Temperature and Humidity Affect Petunia Ornamental Value

Le Hong Nhung Hoang[1] and Wan Soon Kim[1,2]*

[1]Department of Environmental Horticulture, University of Seoul, Seoul 02504, Korea, [2]National Science Research Institute, University of Seoul, Seoul 02504, Korea

Petunias are a representative bedding plant known for their tolerance for hot and dry climates. However, petunia growth and ornamental value as bedding plants in a year-round hot but humid climate such as that in tropical regions is not well studied. In order to evaluate the adaptability of petunias in hot and humid climates, petunia 'Madness Red' was treated with 50% relative humidity (RH) at an air temperature (AT) of 25°C, and with 80% RH at 25°C, 30°C, and 35°C AT. The results showed that at 25°C AT, 80% RH briefly delayed flowering but partially improved shoot growth and ornamental value variables such as plant weight, leaf area, and flower size and longevity compared to 50% RH. At 80% RH, increased AT significantly promoted flowering time and number, but also caused a slight decline in plant development parameters like biomass, flower size, and flower color. Conversely, a rapid decline in plant development was observed at 35°C AT only, indicating heat damage symptoms such as anatomical distortion of the leaf surface. The ornamental value of bedding plants was determined by flower production and longevity during the landscaping period. Petunia ornamental value was optimal at 30°C AT, even though 25°C AT is generally reported to be suitable for plant development in bedding petunias. These results indicate that humid conditions improve the high temperature adaptability of ornamental value in petunia 'Madness Red' which can thus be used as a street landscaping plant in tropical regions.

T. 02-6490-2693, wskim2@uos.ac.kr

성명 : 김완순
학사 : 1993 서울시립대학교
석사 : 1995 서울시립대학교
박사 : 2000 서울시립대학교
2002–2003 박사후연구원 미국 캘리포니아주립대학교(UCDAvis)
1992–2009 농촌진흥청/국립원예특작과학원 연구사/연구관
2009–현재 서울시립대학교 환경원예학과 교수

우수4

Ice Plant Growth and Phytochemical Concentrations are Affected by Light Quality and Intensity of Monochromatic Light-emitting Diodes

Young Jin Kim[1], Hye Min Kim[1], Hyun Min Kim[1], Byoung Ryong Jeong[1,2,4], Hyeon-Jeong Lee[1], Hyun-Jin Kim[1,3,4], and Seung Jae Hwang[1,2,4]*

[1]Division of Applied Life Science, Graduate School of Gyeongsang National University, Jinju 52828, Korea, [2]Department of Agricultural Plant Science, College of Agriculture and Life Sciences, Gyeongsang National University, Jinju 52828, Korea, [3]Department of Food Science and Technology, College of Agriculture and Life Sciences, Gyeongsang National University, Jinju 52828, Korea, [4]Institute of Agriculture and Life Sciences, Gyeongsang National University, Jinju 52828, Korea

The ice plant (*Mesembryanthemum crystallinum* L.), widely known to be an effective cure for diabetes mellitus, is also a functional crop. This study was conducted to examine the effects of light quality and intensity of monochromatic lightemitting diodes (LEDs) on ice plant growth and phytochemical concentrations in a closed-type plant production system. Ice plant seedlings were transplanted into a deep floating technique system with a recycling nutrient solution (EC 4.0 $dS \cdot m^{-1}$, pH 6.5). Fluorescent lamps, as well as monochromatic red (660 nm) and blue (450 nm) LEDs, were used at 120 ± 5 or 150 ± 5 μmol $m^{-2} \cdot s^{-1}$ PPFD with a photoperiod of 14 h/10 h (light/dark) for 4 weeks. Ice plants showed higher growth under the high light intensity treatment, especially under the red LEDs. Furthermore, the SPAD value and photosynthetic rate were higher under the red LEDs with 150 μmol $m^{-2} \cdot s^{-1}$ PPFD. The ice plant phytochemical composition, such as antioxidant activity and myo-inositol and pinitol concentrations, were highest under the blue LEDs with 150 μmol $m^{-2} \cdot s^{-1}$ PPFD. Total phenolic concentration was highest under the blue LEDs with 120 μmol $m^{-2} \cdot s^{-1}$ PPFD. Despite a slightly different dependence on light intensity, phytochemical concentrations responded positively to the blue LED treatments, as compared to other treatments. In conclusion, this study suggests that red LEDs enhance ice plant biomass, while blue LEDs induce phytochemical concentrations.

T. 055-772-1916, hsj@gnu.ac.kr

성명 : 황승재
학사 : 1999 경상대학교 원예학과
석사 : 2001 경상대학교 응용생명과학부 원예학전공
박사 : 2005 경상대학교 응용생명과학부 원예학전공
2005–2009 한국농촌경제연구원부설 농림기술관리센터 전문연구원
2009–현재 경상대학교 농업생명과학대학 농업식물과학과(원예학) 교수

우수5

Effect of Cultivar and Growing Medium on the Fruit Quality Attributes and Antioxidant Properties of Tomato (*Solanum lycopersicum* L.)

Shimeles Tilahun[1,2], Mu Hong Seo[1], Do Su Park[1], and Cheon Soon Jeong[1]

[1]Department of Horticulture, Kangwon National University, Chuncheon, Gangwon 24341, Korea, [2]Department of Horticulture and Plant Sciences, Jimma University, Jimma, Ethiopia

The objective of this research was to identify the growing medium that yielded the highest nutritional quality and longest marketable shelf life in tomato fruits. 'TY Megaton' and 'Yureka' cultivars were grown on soil and coir pith in the same climate-controlled glasshouse using a standard nutrient solution and the recommended cultivation practices. Fruits were harvested at the pink stage of ripening and stored at 12°C in