Study shines light on ways to cut costs for greenhouse growers

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Greenhouse bedding plant growers can save themselves time, money or possibly both by giving cuttings in propagation more light, according to a Purdue University study.

Flower growers use cuttings from Central America and Africa to start spring bedding plants in greenhouses during winter and early spring. Those cloudy days and cool temperatures make propagation time- and energy-intensive.

Roberto Lopez, an assistant professor of horticulture, and horticulture graduate students Chris Currey and Veronica Hutchinson study ways to minimize inputs and production costs in the floriculture industry while improving product quality. Based on what they were hearing from growers, they realized that light wasn't getting the attention it needed from the industry.

"In their minds, temperature has always been the most important thing. They didn't think about light," Lopez said. "We knew that light was significant, but we realize we didn't know what level to recommend."

Currey said growers were concerned that using too much light would stress the cuttings and disrupt root development.

"The dogma has been to keep light low, but that actually made the cuttings take longer to root," said Currey, whose findings were published in the January issue of the journal HortScience.

Currey, Hutchinson and Lopez propagated nine popular spring bedding plants under differing amounts of light for two weeks. They took a quality index used in forestry and modified it for bedding plants to assess the quality of the plants based on the light levels. They measured stem length, stem caliper, shoot dry mass and root dry mass.

Overall, plants rooted faster with more light and the plants were higher quality. Both factors could increase profits for greenhouse growers, Lopez said.

"With reduced production time, you can save on production costs or increase your crop production by starting another second crop that wouldn't have been possible with reduced light," Currey said. "That's increased profits through greenhouse space savings or energy savings, as well as through a higher quality product."

More information: A copy of the paper, with more specific light requirements, can be viewed at sharepoint.agriculture.purdue. … rs/publications.aspx

Provided by Purdue University

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