

Grower Perceptions of LED Lighting for Horticulture

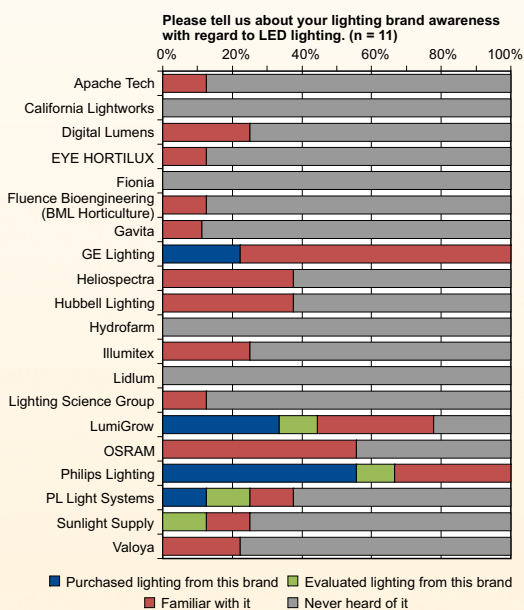
The LRC conducted an online survey aimed at commercial growers from September through November 2016 regarding greenhouse operational concerns and opinions about supplemental electric lighting for growing crops. Growers were asked about their growing environments, the use of supplemental lighting, their operational concerns, lighting energy use, the types of crops they grow, and plant diseases they encounter.

Sixty-one respondents completed the online survey. Thirty-five were growers. The LRC found that:

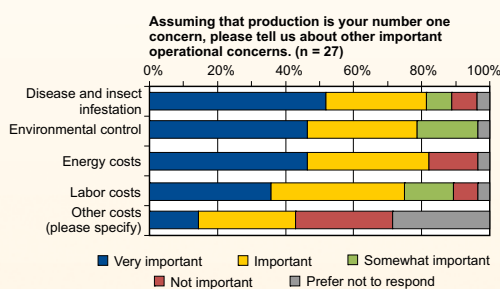
- 74% of growers use greenhouses; one grower (3%) uses a vertical farm.
- 48% of growers currently use supplemental lighting to grow crops.
- 55% of growers using supplemental lighting grow crops under HPS lighting; 25% under LED lighting.
- Growers who use supplemental lighting are familiar with many LED lighting manufacturers.



- Growers identify cost, lack of relevant information, and skepticism as barriers to adopting LED lighting.
- The top five crops grown are tomatoes, lettuce, leafy greens and/or microgreens, flowers, and basil or other herbs.
- After production, disease and insect infestation are the most important operational concerns; environmental, energy, and labor costs are also deemed important by more than 75% of growers.



Growers who use supplemental lighting have evaluated or purchased LED lighting from many manufacturers.



Disease and insect infestation was selected as a very important operational concern by the majority of all growers.

- Powdery mildew and downy mildew are the most commonly encountered plant diseases.
- 67% of all growers would consider using supplemental lighting to treat disease and insects instead of chemical treatments.
- The majority of growers do not know their monthly electrical costs for lighting; 64% of growers report that they pay a flat energy rate or an energy rate plus demand charges for their electricity; 20% of growers do not know how they are billed for electricity.

The grower survey results are available on the LRC website: http://www.lrc.rpi.edu/programs/LightingEnergyAlliance/pdf/LEAGrowerSurvey_Final020717.pdf

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