



Heliospectra and the LEDs Make it Resilient Research Consortium Initiates New Project with Focus on Light and Biocontrol Agents

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Heliospectra AB, a world leader in intelligent lighting technology for greenhouse and controlled plant growth environments, and a proud member of the research consortium *LEDs Make it Resilient* initiates a new project focusing on the effects of light quality on plant growth and plant resilience, in terms of interactions with bumblebees and biocontrol agents. Heliospectra acts as a lighting partner and industry expert and is supplying the project with its fully controllable ELIXIA LED-lighting solution and expertise.

[*LEDs Make it Resilient*](#) is a 4-year Ph.D. program run by an interdisciplinary team at Wageningen University with three Ph.D. candidates. The project is backed by a project consortium also including industrial partners; Heliospectra AB, Biobest N.V., Enza Seeds, Florensis B.V., Schoneveld Breeding B.V., and Westlandse Plantenkwekerij, all with considerable experience and expertise within horticulture and their field of expertise.

Led by Ph.D. student Davy Meijer at Wageningen University and Research at the Department of Entomology, the new project started mid-October and will focus on the effects of far-red light on plants and its interaction with bumblebees and biocontrol agents, such as predatory mites. The tests will be conducted in greenhouse conditions in Radix, Wageningen, and at the Greenlab of Biobest in Belgium.

“Changing the spectral composition of light has numerous advantages for the production and quality of horticultural crops. However, changes in light quality also have a marked effect on plant-arthropod interactions, an area that has received little attention so far. Beneficial insects such as pollinators and natural enemies are an important aspect of sustainable and biological farming. It is therefore important to understand how LEDs influence their behavior and their interactions with the crops. The findings of our research will thus have implications for the wider use of LEDs for sustainable greenhouse horticulture.”, said Davy Meijer, Ph.D. student at the Department of Entomology at Wageningen University & Research.

With the greenhouse industry being responsible for approximately 10% of the natural gas consumption in The Netherlands, and high-pressure sodium lamps being a major consumer, the LEDs Make it Resilient project explores new and exciting opportunities made possible by LED lighting. Besides reducing the industry’s overall energy consumption, the project investigates LED technology’s ability to create more resilient plants and how light quality and temperature effects overall plant quality and production. It also aims to improve sustainable pest control by making crops more resistant to pests from different feeding guilds while looking at biological control of different pest species, crop growth, and underlying crop physiology.

“The focus on this research project – how to use LEDs for making the crop resilient to biotic stresses – is very important as it addresses a major problem in today’s horticultural production. It is also quite unique as this complex research area is not well studied. There are many research questions to answer, and this interdisciplinary team of researchers and industrial

partners are well equipped to do so. Biological control agents or Beneficials are natural enemies or competitors of crop pests and we are excited to use this information as we support growers with sustainable strategies for optimizing production”, said Daniel Bånkestad, Research Manager at Heliospectra.

For the trials, Heliospectra has supplied the consortium with [ELIXIA](#) LED lighting solutions. Heliospectra’s [ELIXIA](#) is designed and built on a foundation of over a decade of research and experience. The fully adjustable, [ELIXIA](#) features up to four tunable wavelengths and is compatible with [helioCORE™](#), Heliospectra’s automated greenhouse light control system. The system enables researchers to automate the light environment for the complete growth cycle, while optimizing quality, growth, and yield which results in a consistent, high-quality crop production all year-round.

For more information about the ongoing project visit the [project website on ResearchGate](#) or read the already published articles [LEDs Make It Resilient: Effects on Plant Growth and Defense](#) published in Trends in Plant Science Nr. 27, December 2020, and [Effects Of Low And High Red To Far-Red Light Ratio On Tomato Plant Morphology And Performance Of Four Arthropod Herbivores](#), published in Scientia Horticulturae volume 292, January 2022.

For more information on how Heliospectra has helped researchers across the globe, visit our website <https://led.heliospectra.com/research>.

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Heliospectra AB (publ) (Nasdaq First North Growth Market: HELIO) was founded in 2006 in Sweden by plant scientists and biologists with one vision – to make crop production more intelligent and resource-efficient. Today, with customers across six continents, Heliospectra is the global leader in innovative horticulture lighting technology, custom light control systems and specialized services for greenhouse and controlled plant growth environments. Designed by growers for growers, Heliospectra builds customized LED lighting strategies and controls to automate production schedules, forecast yields and monitor crop health and performance with real-time data and response, to deliver the light plants love and the consistent results growers need.

For more information, please visit <https://www.heliospectra.com>.