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Promising results first winter cropping trial with fresh junebearers under variable LED lighting

Delphy Innovative Soft Fruit Centre

During the last artificial lighting season, the first steps were made towards a new growing concept for strawberries. This concept trial was focused on a continuous and stable production with fresh junebearers under variable LED lighting. The trial started end of September 2021 and production ended early July 2022.

Lighting is an important addition to spread the production periods of strawberry under glass. In the traditional way of a lighted strawberry cultivation, cooled junebearers are used. This means multiple crops a year and a peaky production pattern per crop. The concept with the fresh junebearers is based on one crop for almost year-round cultivation, with the aim of achieving a stable production pattern and increasing total production per square metre.

Translating the fundamental principle towards a growing concept

The idea behind the project is a fundamental principle that has been tested in a research by Plant Lighting. In this new lighting concept, a variable LED spectrum is used during the day. This means that the plant is illuminated for a long day (and gets energy), but experiences a short day. This is extremely interesting for the control of day length controlled crops. Junebearers induce new flowers under short day. For this reason, junebearers were chosen in for this concept.

In principle, the concept is not yet ready for practice. In the 2021-2022 cultivation at Delphy ISFC, the first steps have been taken towards a concept that can be applied in practice. Conceptual thinking is important to develop a cultivation strategy. Factors like propagation - plant structure, outdoor conditions and plant balance change continuously during cultivation. However, they are of importance as well beside the fundamental principle. This requires a specific way of controlling the climate and lighting. Both the light spectrum and daylight integral (DLI) are taken into account. In the development of this cultivation concept, a strategy has been devised in advance. In this strategy, both of the before named aspects have been systematically worked out in order to be able to maintain plant balance.

With low-chill varieties, we managed to produce 15 kilos of good quality strawberries per square meter in the first year. Sufficient potential is visible towards a stable harvest pattern. The concept is not yet ready for practical use, but offers potential for year-round lighted cultivation with 17,5-20 kilos of production per square meter and lower electricity input per kilogram of product. At Delphy ISFC we work on innovative cultivation concepts, for and through practice, in order to achieve higher efficiency and production.

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Partners in this project are: Signify, NIAB-EMR, Fresh Forward Breeding, Flevo Berry and Plant Sciences Europe. Important incubators for this project are the Delphy ISFC Innovation partners: *Bato, Biobest, Beekenkamp Verpakkingen, Flevo Berry, Fruitmasters, Haifa, Hinova, Jiffy, Koppert Biological Systems, Kekkilä-BVB, Mertens, Signify, Royal Brinkman, Svensson, The Greenery, The Summer Berry Company, Van der Knaap & Van Tuijl Haaften.*

Over Delphy ISFC

Delphy Innovative Soft Fruit Cente (ISFC) vormt een brug tussen onderzoek, innovatie en de praktijk. Hiermee fungeert Delphy ISFC als een broedplaats voor kennis en innovatie en tevens als de 'huiskamer' van de internationale zachtfruit sector. Op internationale schaal brengen we kennisontwikkeling en kennisverspreiding op unieke wijze samen. Om op de hoogte te blijven van het onderzoek op Delphy ISFC meld u dan aan via het aanmeldformulier onze website. Zo blijft u op de hoogte van onze events en activiteiten rondom kennisdeling. <https://delphy.nl/teams/team-delphy-isfc/>

Noot voor de redactie:

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Fotomateriaal kan op verzoek geleverd worden.

Delphy is een toonaangevende en onafhankelijk advies - en onderzoekspartner voor de plantaardige sectoren. Onze activiteiten richten zich op advies, onderzoek en projecten, zowel in Nederland als daarbuiten. Door continu vernieuwende en eigentijdse diensten en producten in de markt te zetten creëert Delphy meerwaarde voor ondernemers. Delphy heeft 200 adviseurs, onderzoekers en projectleiders in dienst. Delphy ontwikkelt praktijkkennis door eigen onderzoek uit te voeren op diverse 'vernieuwingsbedrijven'. Hierbij wordt veelal samengewerkt met partners. Voor meer informatie, kijk op www.delphy.nl.