

Effects of Supplemental Lighting on Hemp Growth in Florida: **What We Know So Far**

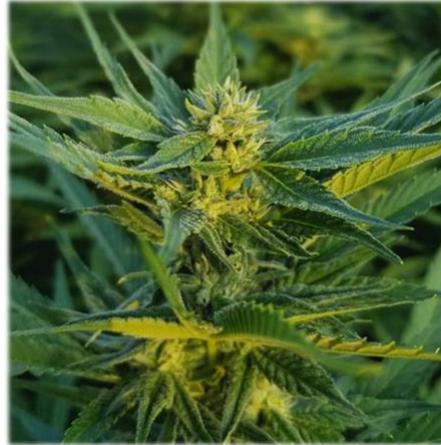
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In Central Florida the day length is rather short, averaging 11-14 hours. This is important to note as certain plants have a critical day length, the period of day or light required to regulate flowering.

At UF's Gulf Coast Research and Education Center (GCREC) in Balm, FL, the use of supplemental lighting with LED lights was implemented to control the flowering of hops (*Humulus lupulus*), a member of the Cannabaceae family and whose female flower is a key ingredient in beer.

Hops prematurely flowered under natural Florida conditions due to inadequate day length but, after receiving >17 hours of daylight, produced high yields and vigorous plants that did not flower early in the season.

Hemp (*Cannabis sativa* with <0.3% THC) is also a member of the family Cannabaceae. Just like hops, hemp has a short-day period.



Two field trials were conducted at the **GCREC Farm** in fall (2019) and spring (2020) to evaluate the growth of different hemp cultivars with and without supplemental lighting in natural Florida conditions.

WITH SUPPLEMENTAL LIGHTING ☀️

- Hemp plants **did not prematurely flower**
- Total plant **biomass** (height, weight, yield) was **significantly increased**

WITHOUT SUPPLEMENTAL LIGHTING ☁️

- Hemp plants **flowered** 1 week after planting and all cultivars used flowered **after 1 month**.
- Overall plant **biomass** was **reduced** in all cultivars (height, weight, yield)



Avg. height: < 1ft



Avg. height: 3-5 ft



Cherry Blossom x T1 **without** supplemental lighting



Cherry Blossom x T1 **with** supplemental lighting

Extending the day length in early spring and fall by supplying 6 hours of extra light during the first part of the growing season greatly improved production of all hemp cultivars tested. As is the case for hops, adding supplemental lighting greatly improves hemp production in Florida and will allow growers to produce multiple crops a year.

FOR MORE INFORMATION

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Desaegeer Nematology Lab