

**Norwegian tittel: Effekt av lyskvalitet på vekst, avling og kvalitet hos agurk produsert i veksthus**

**English title: Effect of Light quality on growth, yield and quality of cucumbers produced in controlled environment**



Light is one of the most important environmental factors, acting on plants not only as the sole source of energy, but also as the source of external information, affecting growth and development. In Northern Europe cucumbers are produced with the use of supplementary lighting in periods when the natural solar radiation is low. The most common lamp type is gas-discharge lamp-type (High-Pressure Sodium, HPS). However, narrow band light emitting diodes (LEDs) and broad band LEDs are available in the market and used in commercial plant production in many countries. In Norway, a few cucumber growers have started to use LED lamps in their production. It is expected that LED will be the most important lamp type to be used for plant production in greenhouses and plant factories in the future. The spectral distribution of the light affects many processes of plants especially morphogenetic and photosynthetic responses but also sink strength of fruits. In this thesis work you will analyze growth and development of cucumber plants grown with LED with different spectral distribution. Different methods will be used in this topic (depending on your background): measurements of photosynthesis, analysis of carbohydrates (HPLC) and metabolites, growth analysis, etc

**Subject area: Light quality, photosynthesis, production in controlled environment, carbohydrate metabolism, morphogenesis**

**Language thesis: Norwegian and/or English**

**Bachelor or Master thesis**

**Credits: 15, 30 or 60 credits**

**Project/company: Agurk-klubben, Norsk gartnerforbund (NGF)**

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