TECH OFFER

Customisable LED Software for Indoor Farming

OVERVIEW

By the year 2050, nearly 80% of the world earth's estimate 9.8 billion population will reside in urban centers. In addition, factors such as climate change, limited arable land and pollution will make indoor farming an attractive option. Current technologies used in traditional farming will definitely be inadequate and for Singapore, it will be even more vital to achieve food security with limited resources. The technology described herein consists of a horticultural LED system that can eventually help to address 2 main concerns of urban farming - operation cost and crop yield. The predictive algorithms can help to predict important lighting information necessary for indoor farming. This lighting information is crucial for end-user (e.g. farmers) to formulate their own "light" recipe for optimizing the growth rate of their crops. In addition, it has analytics features that can assist in analysing DLI, energy costs, etc. for improving crop yield. The technology owner is seeking partners to collaborate through various modes including technology licensing and test bedding.

TECHNOLOGY FEATURES & SPECIFICATIONS

Software functions: 1) Personalised configuration The software is designed for seamlessly configuration and can be configure separately and independently for different shelf. This configuration can be fully automated to allow for different environmental parameters at different time frames or growth phases of the crops. 2) Smart analysis The software can perform analyse and predict the light recipe the plant canopy is experiencing. Parameters subjected to analysis includes light map, light ratio, etc. This will shorten the time needed for end users to measure these parameters greatly, and hence improve productivity. In addition, the software allows users to set time periods to run pre-set light intensity according to individual desired needs, effectively automate the system.

POTENTIAL APPLICATIONS

The software platform is catered for different plant stages from propagation, growth to flowering at any indoor facilities such as indoor vertical farm as well as in research centers for crop research and development. The system can be apply to the following segments of the market, which can utilize this platform includes the following: Controlled plants R&D for pharmaceutical use Urban food production Vertical farms Laboratories/research/education institutions Hobbyist

UNIQUE VALUE PROPOSITION

Cost saving Optimise crop yield Reduce R&D time Versatility of the lighting for different crops/growth period Scalability (dependent on the number of LED) Wide coverage (~ 2 km indoor)