

Laser-based light regulation technology and its application in Greenhouse agriculture



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Abstract

Facility agriculture faces the problem of light shortage. Traditional light sources such as LED have high energy consumption and limited use. Urgent need for a new generation of light sources to solve industrial problems. This report discusses the characteristics of laser technology and its application in greenhouse agriculture, focusing on the key technologies and application progress of laser to promote plant photosynthesis, including: Research progress of laser plant lighting equipment, Mechanism of laser promoting crop photosynthesis, Laser light supplement promotes facility planting to improve quality and efficiency, Laser irradiation enhances seed activity and promotes yield increase. Reducing energy consumption of factory planting by laser lighting. Laser system has become a new equipment for facility agriculture, which has opened a new door for greenhouse agriculture.

Biography

Prof. Minglai YANG, Professor, doctoral tutor, National-Level Leading Talent in Scientific Research, outstanding engineer in Zhejiang Province, class B talent in Jilin Province, deputy director of academic committee of Jilin Provincial Key Laboratory of Light Agriculture, leader of laser agriculture discipline in Jilin Agricultural University, is mainly engaged in the application of laser technology to agriculture, conducting in-depth research in the fields of laser-promoted photosynthesis mechanism, interaction mechanism with animals and plants, and laser agricultural equipment development. At present, he is committed to the integrated technology research of laser combined with smart agriculture applied to facility fruit and vegetable factories, plant factories, rice seedling factories, seed industry rapid propagation accelerators and so on. He has published more than 80 papers and authorized more than 20 invention patents. The developed technology and products are widely used in more than 150 bases in 24 provinces across China.