

Guangdong Engineering Research Center for Agricultural Aviation Application, International Lab of Agricultural Aviation Pesticide Spraying Technology



Professor Xiwen Luo
Academician of Chinese
Academy of Engineering

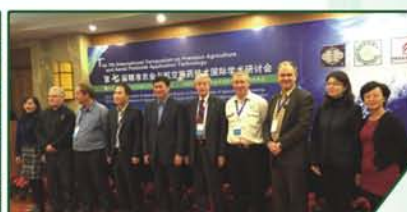
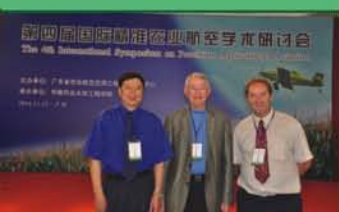


Precision agricultural aviation technology research team in South China Agricultural University is composed of over 30 faculty members and 25 graduate students from agricultural engineering, machinery, electronics, communications, mechanics, image processing, computer, plant protection and other various disciplines. Under the leadership of Professor Xiwen Luo, Academician of Chinese Academy of Engineering, and Professor Yubin Lan, chair of CIGR Precision Aerial Application Working Group, the team carries out research on key technologies for precision agricultural aviation and promotion of agricultural aviation application techniques.

Relying on “Guangdong Engineering Research Center for Agricultural Aviation Application” and “International Laboratory of Agricultural Aviation Pesticide Spraying Technology”, the team has six specialized laboratories for agricultural aviation applications including UAV agricultural applications laboratory, spraying drift control technology laboratory, aerial remote sensing technology and equipment laboratory, aerial and ground spraying technology and equipment laboratory, remote sensing information retrieval system laboratory, new sensor and wireless sensor network systems and instrument development laboratory with the office accommodation area of approximate 1000m² and the research and service area of nearly 6000m².



Professor Yubin Lan
“1000 Talents Plan” Scholar



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Main Research Activities

Currently, the team focuses on the research of aerial plant protection, agricultural remote sensing, hybrid rice seed production and special operations.

The team and cooperative enterprises jointly launched the aerial spraying study on citrus in Yunnan high altitude area. The introduction of agricultural UAVs can greatly improve labor shortages, and effectively reduce costs.

Small UAVs are applied for hybrid rice pollination with the wind field created by the rotors. Currently hybrid rice seed pollination study of the team has achieved significant progress and previous 1-2 paternal to 8 maternal lines expands to 8 paternal to 80 maternal lines.

In 2014, the team carried out cotton defoliant spraying experiment for the first time in Xinjiang cotton planting region. Results show that cotton defoliation rate reached up to 81% with aerial defoliant spraying.

The team also conducted the first rice air broadcasting study in China. Tests results proved the high working efficiency and low operation cost. The team now further expands the research on sowing uniformity, operation parameters and flight parameters during rice air broadcasting.

International collaborations

In 2014, organized by the team, “the 4th International Symposium on Precision Agricultural Aviation” was held in South China Agricultural University. During the meeting, the “International Precision Agricultural Aviation Application Technology Center” was founded as an important platform for future international exchanges and cooperation. In 2015, the team successfully signed five-year cooperation agreements with USDA ARS, and the Pesticide Application and Safety Research Center of The University of Queensland, respectively. Wide collaboration is undertaking on Chinese personnel training, joint aerial spraying tests, research and development of key technology and equipment for agricultural aviation, etc.



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