

The Institute of Urban Agriculture (IUA) is one of the 34 national institutes within the Chinese Academy of Agricultural Sciences (CAAS) and an important supporting unit of the National Agricultural Science & Technology Center (NASC). IUA consists of over 100,000 m² of dedicated experimental and office spaces and invested more than RMB 100 million to provide the best research environment for its researchers to conduct world-class research and pursue advances in urban agricultural sciences.

The professional visit including three stops:

Plant Factory Crop Breeding Accelerator

In order to ensure the food demand of the future world population, solve the problem of long cycle and low efficiency of traditional hybrid breeding, and accelerate the improvement speed of crop varieties. It is the first innovative research platform for accelerating crop breeding using plant factory method in the world. With the technological advantages of fully controllable environment, it accelerates crop growth, early flowering and fruit-bearing by coupling control of environmental factors such as light and temperature and rhizosphere nutrient environment.

We had achieved a halving of the growth period, broken through seasonal climate restrictions, and achieved continuous annual breeding, and successfully achieved rapid breeding of major food crops such as rice, wheat, soybeans, and corn for 5-6 generations per year. This technology is a bold innovative exploration to solve breeding problems and food security in an industrial way, and also provides important technical reserves for large-scale grain production in plant factories in the future.



Whole-process Automated Plant Factory

The whole-process automated plant factory is a super food production system independently developed by Dr. Yang Qichang's team. This system integrates the advanced technologies of bioengineering, automation, informatics and material science, and is equipped with a full set of automatic operation robots, innovative logistics system and intelligent production management system, which can realize the automatic operation and efficient management of the whole cultivation process from sowing to harvesting, and packaging. Combined with key technologies such as uniform regulation of super-high cultivation environment, precise dimming of intelligent LED, online monitoring and regulation of nutrient solution, extremely high resource utilization efficiency and production efficiency of the whole system was achieved.

This system was currently designed to covers an area of 100 m² and is 8.8 meter's high with 20 cultivation layers, annual yield of leafy vegetables was estimated to be 50 tons.



Intelligent Roof Agriculture High Quality Scenarios

High quality scene of intelligent roof agriculture, covering an area of 1068m², is positioned as the integration and demonstration of new varieties, new technologies, new equipment and new scenes of roof agriculture. It also has the functions of science popularization, visit, experience and business negotiation. It provides the overall solution of roof agriculture for Chengdu Chongqing metropolitan area, such as roof planning and design, on-site construction, landscape construction, technical support and continuous services, We can also provide various personalized professional services, with the goal of becoming a designer of roof agriculture construction plans and a provider of related products and services in China. The functional zoning includes six modules: intelligent nutrition regulation, home gardening equipment and scenarios, integration of urban modern agricultural technology, leafy vegetable and fruit factories, new scenarios of leisure agriculture, and clean energy.

