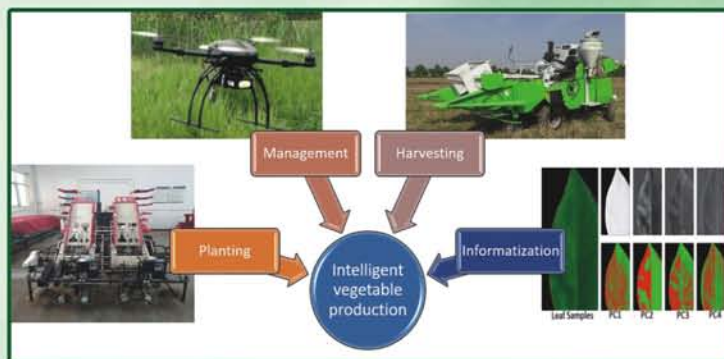


Intelligent Vegetable Production Laboratory, Henan University of Science and Technology

Taking high quality and high efficiency production of vegetables as goals, aiming at the agronomic characteristics of large-scale standard planting of vegetables and the developing trend of mechanization of agricultural production in the whole process, the laboratory decomposes the tasks according to the main production links of open field vegetables. The lab mainly studies key technologies of design and manufacture of intelligent operation equipment in the three core stages of vegetable production cycle such as planting, management and harvesting. The equipment such as pneumatic precision sowing, intelligent monitoring of vegetable growth and mechanized harvesting were studied. The output of the lab includes intelligent agricultural machinery design theory, crop growth management software and new production equipment, to promote the transformation and upgrading of agricultural machinery industry, and the improvement of quality and efficiency in China's vegetable industry.



Research directions and contents mainly consist of the following aspects:

- (1) Research and development of key technologies and equipment for precision seeding and high-speed planting.
- (2) Research and development of vegetable growth information acquisition technology and precision control system.



Prof. Ji Jiangtao

PhD, Secondary Professor, Doctoral Supervisor, Dean of College of Agricultural Equipment Engineering, Leader of first-level key discipline of Henan agricultural engineering.

- (3) Research and development of intelligent harvesting technology and equipment for leaf vegetable.

Professor Ji Jiangtao, who is in charge of the laboratory, has been engaged in the research of new theories and new technologies of agricultural machinery, intelligent agricultural equipment technology, especially in crop stalk cutting theory, straw crushing and stubble returning technology, grain harvest threshing and cleaning technology, intelligent agricultural equipment technology and other aspects of long-term research. He hosted or participated in 2 National "863" Projects, 1 National Science and Technology Support Project, more than 10 provincial and ministerial level scientific research projects, and achieved 31 provincial and ministerial level scientific and technological achievements, and 6 provincial and ministerial level science and technology progress awards. He awarded 21 Invention Patents, 66 utility model patents, and have published more than 80 papers. Relying on the agricultural engineering subject of Henan University of Science and Technology, the

laboratory combines the actual needs of agriculture and agricultural machinery production in China, insists on combining basic research with applied research, and combines primitive innovation with integrated innovation.

The lab has the large-scale specialized instrument equipment: the high speed photograph system, handheld laser scanning system (LTD706), the type virtual reality design system (LTD706), the island electronic tensile testing machine (AG-250X, data acquisition system (i2700), etc.



Transplanting test system of potted seedling



Electric and precision seeding machine for small vegetable seeds



Test platform for transplanting vibration analysis



Test platform for automatic conveying of transplanting

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Research Achievements and Impact of Intelligent Vegetable Production Laboratory, Henan University of Science and Technology

There are 11 researchers in the team now, including two professors, four associate professors, five assistant professors. Half of the team are under 35 years old, full of vigor and energy. In the last five years, the team has undertaken dozens of research projects, including National Natural Science Foundation of China, National Key Research and Development Plan, Henan Provincial Key Research and Development Plan, etc. Over 100 papers have been published in prominent journals such as Renewable & Sustainable Energy Reviews (IF:8.05), and fifty patents have been authorized.



Awards and Honors

- Second Prize in Henan Science and Technology Progress
- Second Prize in National Science and Technology Progress Award
- Second Prize of Science and Technology Progress of Machinery Industry in China
- Third Prize of Science and Technology Progress of Machinery Industry in China
- Third Prize in Henan Science and Technology Progress



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