Discussion on the Cultivation Model of Graduate Students of Agricultural Engineering under the Background of Intelligent Agricultural Development

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Abstract. In the process of construction and development of China's intelligent agriculture, there are many practical problems, such as the serious shortage of high-quality professional and skilled personnel and the difficulty of transformation of scientific research achievements. Based on the development trend of intelligent agriculture in China, the paper focuses on the cultivation model of agricultural engineering degree postgraduates from four aspects: training objectives, curriculum system construction, construction of practice bases inside and outside schools, evaluation methods of papers and degree evaluation system. The aim is to improve the quality of graduate students majoring in agricultural engineering and to provide high-skilled and high-level professionals for the development of intelligent agriculture in China.

Introduction

China is a big agricultural country, but it is not a powerful agricultural country. Agriculture, the primary industry, is the foundation of China. The development of agricultural informatization has roughly gone through four processes in the process of transformation from traditional agriculture to modern agriculture: computer agriculture, digital agriculture, precision agriculture and intelligent agriculture [1]. Intelligent agriculture is a new form and mode of modern agriculture based on Internet and cloud platforms. It mainly includes intelligent production, intelligent circulation, intelligent sales, intelligent community, intelligent organization and intelligent management and applies communication technology, perception technology, interconnection technology and intelligent technology to agricultural systems. Intelligent agriculture can enhance the efficiency of agricultural production, improve the quality of agricultural products, make agricultural development more efficient and wiser, and then enhancing the competitiveness of agricultural products, achieving sustainable agricultural development, improving the utilization rate of rural energy, and protecting the ecological environment [2]. At present, the development momentum of intelligent agriculture is in the ascendant, and the factors hindering its rapid development are gradually emerging, such as personnel training, information technology and so on [3]. This paper will analyze the development trend of China's intelligent agriculture and explore the talent cultivation model under the background of intelligent agriculture development. Under this cultivation model system, a high-level personnel team of agriculture, countryside and peasants will be provided for the development and construction of intelligent agriculture, so as to speed up the pace of China from a big agricultural country to a powerful agricultural country.

Development Trend of Intelligent Agriculture in China

In recent years, the government has attached great importance to agricultural development, promoting the development of "Internet +" modern agriculture, and creating intelligent agriculture. General Secretary Jinping Xi put forward in the report of the 19th Congress of the Communist Party of China that priority should be given to the development of agriculture and countryside, accelerating the modernization of agriculture and countryside, constructing the modern agricultural industry system, production system and management system, perfecting the system of agricultural support and protection, developing various forms of moderate scale operation, and cultivating new types of agriculture. The main body of business management should improve the service system of agricultural socialization and realize the organic connection between small farmers and modern agricultural development. Premier Keqiang Li put forward in the government work report in 2018 that we should cultivate new business entities, improve the level of agricultural science and technology, promote the all-round development of agricultural mechanization, strengthen socialized services for small farmers, and encourage and support returning migrant workers, college graduates, scientific and technological personnel, veterans and industrial and commercial enterprises. New mode of agricultural should be constructed and developed in rural areas. The Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China in 2016 proposed to promote the construction of agricultural informatization, strengthen the integration of agriculture and information technology, and develop intelligent agriculture. The National Agricultural Modernization Plan (2016-2020) put forward the implementation strategy of "Intelligent Agriculture Leading Innovation Project". The state's support for the policy of intelligent agriculture will accelerate the transformation and fission of traditional agriculture, accelerate the transformation from traditional agriculture to intelligent agriculture, and make the agricultural field of China glow with new brilliance.

However, lack of high-quality management personnel, insufficient scientific research system, inadequate ability to popularize scientific research achievements, poor physical infrastructure, low level of modernization of machinery and equipment, and a series of problems hindering development also arise during the development of intelligent agriculture[4].The serious loss of high-quality manpower in rural areas in China has led to a serious lack of endogenous motivation for the development of intelligent agriculture, and the slow development of localization in rural China. Secondly, due to the lack of unified guidance and support for agricultural research institutions in China, the application of scientific research results is not enough. The standard parameters of many agricultural science and technology systems in China are difficult to determine according to large-scale production data, and many scientific research results are difficult to apply to the development of intelligent agriculture research in China because of lacking application test.

Construction of Cultivation Model for Graduate Students of Agricultural Engineering under the Background of Intelligent Agricultural Development

Defining the Training Objectives of Postgraduates Majoring in Agricultural Engineering

All training units must set clear training objectives to adapt to the development and construction of intelligent agriculture. The purpose of agricultural engineering degree graduate students is to cultivate high-level applied talents with strong ability to solve practical problems, professional skills or management, and good professional quality. In addition, students should also master the relevant theoretical knowledge of scientific and technological innovation and technological development, engineering design and implementation, technological tackling and technological transformation, engineering planning and management, new technology promotion and application in the field of agricultural engineering. Students are required to firmly grasp the basic theory and systematic expertise in the field of agricultural engineering; have a comprehensive understanding of the current situation and development trend of this field at home and abroad, and have a wide range of knowledge; be skilled in using computers, and use advanced scientific and technological and experimental methods to solve the problems involved in this field. The theoretical abilities and

practical abilities can be improved simultaneously through the cultivation of postgraduates.

Strengthening the Construction of Postgraduate Course System and Innovating Teaching Forms

At present, the curriculum of professional degree postgraduates in most universities is only fine-tuned on the basis of academic postgraduates, which mainly carries out basic theoretical education, but involves fewer professional practice courses. The characteristics and advantages of professional postgraduates have not yet been reflected, and failure to meet the training objectives of applied high-level professionals to meet the actual needs of specific industries or occupations. Therefore, we should promote the construction of the First-Level Discipline Curriculum system, professional degree category curriculum system and characteristic curriculum of agricultural engineering specialty under the background of intelligent agriculture development. For example, in the first eight weeks of the first semester, basic courses such as Engineering Mathematics, Introduction to Agricultural Engineering, Modern Agricultural Equipment Engineering, Modern Design Methodology and other basic courses, subject-specific courses and cross-disciplinary courses will be offered; in the next eight weeks, analytical instruments, intelligent sensor technology, agricultural Internet of Things technology will be completed in and out of school practice bases or related enterprises. The last two weeks are devoted to offering innovative courses of postgraduate specialty such as inspiration and discussion, practical skills training, scientific research and innovation training, so as to truly improve students' ability to apply theoretical knowledge to solve practical problems. In foreign language teaching, it is necessary to reform the traditional teaching mode, add postgraduate professional English courses, and strengthen postgraduate foreign language communication ability and writing ability. The training units should invite foreign experts in agricultural engineering field to make academic exchanges. On the one hand, they should exercise students' foreign language ability, on the other hand, they should broaden their horizons and let students understand the research frontiers in this field abroad, so as to better guide students to serve the development of intelligent agriculture in China. In addition, the construction of public elective courses for postgraduates should be continuously promoted, so that postgraduates can elect related courses according to their research needs and interests, so as to improve their academic level and professional ability. From the team level, academic exchanges and sharing meetings can be organized regularly by senior graduate students. Teaching and training can be carried out for knowledge not involved in graduate courses and experimental skills needed by the team, such as the specific operation methods and skills of software, the operation specifications of large precision instruments and matters needing attention, etc. In this way, we can form an organic supplement to knowledge learning in the classroom [5].

In the form of teaching, it breaks the "cramming" teaching mode which is taught by traditional teachers and students passively learn and accept. For agricultural engineering degree postgraduates, teaching should be based on case teaching and "Internet +" teaching. Case teaching is an open and interactive teaching method. Teachers can take the practical problems encountered in the process of investigation as cases in class for students to discuss and improve students' ability to think independently and use theoretical knowledge to solve practical problems [6]. "Internet +" teaching is a new teaching method with the help of Internet technology. The goal of graduate students is to use advanced technology to serve agriculture after graduation for graduate students majoring in agricultural engineering. Therefore, we should actively use new media such as micro-blog, micro-message, mobile phone APP and other innovative teaching forms to record and admire classes, micro-classes and so on, urge students to allocate time rationally, turn zero into a whole, and listen to their interested and necessary knowledge at any time, learn repeatedly, and improve the efficiency of theoretical courses.

Strengthening the Construction of Practice Bases inside and Outside Schools and Improving the Innovative and Practical Abilities of Postgraduates

To develop intelligent agriculture, science and technology is the first productive force, and innovation is the first driving force for development. Agricultural engineering degree points that we

should actively build and rely on joint training bases inside and outside schools to improve the practical application ability and scientific and technological innovation level of agricultural engineering degree postgraduates. The training program for graduate students majoring in agricultural engineering clearly points out that the cumulative practice time of students in off-campus practice bases is not less than 6 months. It is difficult for students to acquire real skills during their off-campus internship because the outside tutors have their own duties, busy work content and limited guidance time for students, and students have just arrived at the practice base are not very familiar with the work content, the contact is also the most basic thing, short practice time [7]. Therefore, training units should formulate practical teaching syllabus, clarify practical teaching contents, ways and assessment standards, and strengthen the construction of practical platform in schools according to the goal and requirement of intelligent agriculture development. Adopting the joint training mode of "introducing-going", which combines the practice platform inside the school with the practice base outside the school to train talents, and introduce enterprise technicians to teach regularly, so as to effectively improve students' practical ability, innovation ability and independent learning ability.

To develop intelligent agriculture, we must go deep into the grass-roots level, really understand the current situation of agricultural production, find and solve practical problems. To cultivate graduate students of agricultural engineering specialty, we must start with specific practice. Firstly, the thesis topic selection requirements directly come from practice. We should organize graduate students to observe study and think more in field production sites and equipment production workshops. We should listen carefully to the suggestions of farmers and workshop masters based on personal experience. Practical production problems require every graduate student to complete the research process of "scheme design, field experiment, feasibility analysis and optimization promotion" in accordance with the requirements of intelligent agricultural development, so as to master the excellent practical ability, from practice to practice, and transform scientific research results into actual production.

Improving the Evaluation Methods and Degree Assessment System and Ensuring the Quality of Postgraduate Training

The topic selection of agricultural engineering degree thesis should be based on the needs of tutors and cooperative enterprises, aiming at solving the practical problems of agricultural development, which has clear practical significance and application value. Graduation thesis can be presented in engineering design, engineering management, project management, research reports and other forms. The degree committee formulates corresponding basic requirements and evaluation criteria for degree thesis according to different forms of degree thesis. In the process of dissertation work, the degree committee should regularly organize members of the degree committee (including tutors inside and outside the school) to follow up the students' work and strictly open the questions (The subjects chosen by the students must be innovative or practical); attach importance to mid-term assessment, solve puzzles in the process of students' work in a timely manner, and put forward constructive suggestions. Finally, when reviewing and responding to the dissertation, it is necessary to have relevant enterprise experts to evaluate the practical application value of the research level.

Summary

As a new talent training mode, master degree postgraduates of agricultural engineering specialty are still in the initial stage. Their training objectives, training programs, teaching methods, teaching contents, supervisor management mechanism and assessment methods need to be constantly reformed and improved in order to further improve the comprehensive quality of degree postgraduates of agricultural engineering and transport a large number of senior professionals for the development of China's intelligent agriculture.

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