

## PROCEEDINGS ARTICLE

# Practice and Exploration of the Cultivation of Freshmen's Professional Knowledge and Interest in Majoring in Plant Protection

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## ABSTRACT

In view of the current teaching practice system of the plant protection specialty and its existing problems, this article discusses effective measures to strengthen freshmen's cognition and interest in the specialty, which has achieved good results after implementation. In the end, the authors look ahead to the reform system of practical teaching and put forward a series of suggestions for improvement.

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## 1. INTRODUCTION

The professional course of plant protection is a subject with strong application. Practical teaching is an important part of the course and an important means to inspire students' scientific thinking, improve their practical skills and exercise their innovation and entrepreneurship ability [1,2]. The timely and effective practical exercise of freshmen is conducive to the cultivation of professional cognitive ability, professional interest or professional awareness. The cultivation of practical ability not only cultivates the practical ability, but also, more importantly, cultivates the ability to apply comprehensive knowledge and condense scientific problems [3].

China is a large agricultural country, and agriculture has always been valued and supported by the country, but the contribution rate of agricultural science and technology is still far behind that of developed countries [4]. In addition, in recent years, in the face of challenges such as accelerated globalization and

global climate change, crop production has suffered more serious threats, such as the invasion of dangerous alien species, the frequent occurrence of destructive pests and diseases, and changes in the types of major pests and diseases [5,6]. In this era, agricultural science and technology personnel bear enormous pressure and responsibility, and it is urgent to promote agriculture through science and technology. Plant protection is an indispensable discipline to promote agriculture through science and technology. By developing comprehensive theories and methods, the discipline protects target plants from harmful organisms or reduces the harm to below the economic threshold, in order to improve crop yield and increase farmers' income. The development of plant protection is one of the important links to ensure the healthy and sustainable development of agriculture [7]. Based on the achievements in the past four years in the College of Agriculture and Biotechnology of Hunan University of Humanities, Science and Technology, this article takes various measures and ways to cultivate the cognitive ability

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and learning interest of freshmen majoring in plant protection, which is beneficial for them to acquire professional knowledge, develop professional quality, improve solid practical ability and strong innovation and entrepreneurship ability.

## 2. PROBLEMS IN CULTIVATING PLANT PROTECTION PROFESSIONALS

For a long time, the public is short of enough understanding of agronomy, and they think that they will eventually go to farming. The students majoring in plant protection are all affected by the word "agriculture", so they have a very serious burden in thought. Few students take the initiative to apply for the major, which seriously affects the quality of students. Some college students are confused about their professional development in the future, losing motivation, so they cannot give full play to their subjective initiative and creativity.

The major of plant protection is relatively unpopular, which generally leads to students' deviation in their understanding of the development prospect. In Hunan University of Humanities, Science and Technology, the students enrolled in plant-protection major are mainly from Hunan Province, with more than 90% students coming from rural areas. The freshmen lack interest in agriculture related to the majors, their professional ideas are unstable, and their graduation development prospects are not good.

The training mode of plant protection professionals is difficult to meet the needs of society and industry. The agricultural bureau, agricultural technology extension station, plant protection station and other grass-roots departments are short of funds, and the agricultural extension departments at the township level are difficult to maintain. Most of them are unwilling to accept graduates from agricultural colleges and universities; Agricultural graduates are also reluctant to work in agricultural technology in the county and district agricultural grass-roots departments.

The above factors have caused students' lack of initiative in learning, and they are in a passive and blind state of learning; Teachers' enthusiasm for teaching is not high, they are more willing to engage in scientific research, lack interest in undergraduate talent training, and the momentum of teaching and educating people cannot be effectively released. The existence of these problems has seriously restricted the quality of talent training.

## 3. INTRODUCTION TO PLANT PROTECTION TEACHING PRACTICE SYSTEM IN HUNAN UNIVERSITY OF HUMANITIES, SCIENCE AND TECHNOLOGY

In Hunan University of Humanities, Science and Technology, the plant-protection discipline is a double first-class applied characteristic discipline in Hunan Province. After years of development and accumulation, it has formed three research directions with distinctive characteristics and obvious advantages: research and application of farmland weed control technology, plant pathology, and agricultural pharmacy. The discipline relies on the scientific research conditions and platform of the provincial 2011 Collaborative Innovation Center of Hunan University of Humanities, Science and Technology "Hunan Agricultural Weeds Collaborative Prevention and Control Center", the provincial application characteristic discipline "Plant Protection" and the provincial key university laboratory "Pesticide Harmless Application Laboratory".

In plant protection professional training, students are required to complete 170 credits, including general education (54.5 credits), professional education (108 credits) and innovation & entrepreneurship education (7.5 credits). Students should build professional knowledge, comprehensive quality and innovation and entrepreneurship ability. Students are required to be high-quality applied talents who master the basic theory, basic knowledge and basic skills of plant protection, understand the frontier of the discipline, develop strong ability to practice, and cultivate their ability in innovation and entrepreneurship, and they can engage in teaching, scientific research, production, management and promotion services in plant protection and related fields in administrative organs, institutions and relevant enterprises.

In Hunan University of Humanities, Science and Technology, scientific research cooperation on the plant-protection discipline has been actively carried out with Hunan Academy of Agricultural Sciences, Hunan Agricultural University, Hunan Haili Hi-tech Industry Group and other core units, and cooperated with Hunan Zhenhong Science and Technology Co. Ltd., Hunan Wanjiafeng Science and Technology Co. Ltd., Hunan Yahua Seed Industry Co. Ltd., Shuangfeng Xinsheng Farmer Specialized Cooperative and other industrial enterprises. The industry-university-institute cooperation can provide new impetus for the quality of plant-protection personnel training, the level of scientific research, and ability to serve society.

## **4. MEASURES TO CULTIVATE AWARENESS AND INTEREST IN PLANT PROTECTION**

### **4.1. Strengthening Enrollment Education of Freshmen**

In the College of Agriculture and Biotechnology, enrollment education for freshmen aims to let students know about the majors, graduation, employment, etc. Schools can carry out education on school discipline and rules, relevant systems of the college and career guidance to help freshmen develop good living habits and improve their overall quality. The teaching office shall provide good course guidance, including courses selection and arrangement, credits and tuition, textbooks and other related education, so that freshmen can understand the relevant provisions on course teaching. The Student Work Office and the head teacher should do a good job of ideological and political education for students and help them adapt to college life as soon as possible. They should get to know the basic situation of each student through the head teacher, master the dynamic data of freshmen, and carry out thematic class meeting activities. Each professional teaching and research office should do a good job of professional introduction, including professional situation, learning content and employment prospects, to lay the foundation for the development of professional courses and stimulate students' interest in professional learning.

### **4.2. Implementing the Academic Tutorial System**

In view of the difficulties of most freshmen in learning, the College of Agriculture and Biotechnology organized academic leaders, well-known professors and young doctors of the specialty to explain the university learning methods, specialty learning characteristics, specialty advantages, professional employment prospects, etc. for the freshmen, in order to enhance their professional recognition and learning confidence. The college can invite new doctoral teachers to introduce learning methods, experiences and models, solve difficulties encountered in learning and different learning characteristics and requirements at different stages, teach freshmen how to learn in university, and provide reference for freshmen to better adapt to university learning.

### **4.3. Carrying Out Professional Development Exchanges**

The schools can invite well-known experts in the industry, agricultural grassroots personnel, and outstanding graduates to the school to exchange ideas, introduce personal career development, share research frontiers and production practice needs, so that freshmen can understand the importance of professional training for talents, establish interest in horticulture, and increase professional identity. For the discipline of plant protection, the people involved can hold the discipline forum of plant protection application characteristics and the "training forum of outstanding talents in plant protection against the background of new agricultural science construction", invite experts, scholars and technical talents in the field of plant protection to put forward opinions on the positioning, construction ideas and measures of the discipline of plant protection application characteristics, carry out discussion on plant protection talent training, and provide strong support for the training of plant protection professionals.

### **4.4. Improving Teaching Methods & Means**

In the teaching class, the group case teaching method, research teaching, discussion teaching and problem-oriented teaching method are adopted. It is proposed to use multimedia technology, MOOC, virtual simulation laboratory and other modern teaching methods combined with blackboard writing. It is necessary to strengthen the communication between teachers and students in the classroom, use accurate and vivid language to teach knowledge, pay attention to the change of intonation, volume and rhythm, and make the image more vivid, so that the language has a sunny taste, and the language expression is full of emotion. And it is also necessary to take appropriate incentive measures to improve students' self-confidence and enhance their interest in learning. In addition, there is a must to create a loose and harmonious classroom atmosphere, become a teacher and friend of students in the classroom, people-oriented, open the classroom to students' requirements, and focus on stimulating students' perception. There is also a necessity to strengthen the practical teaching link, competitions related to professional knowledge can be held, and college students can win the competition by self-study and mastering professional knowledge.

#### **4.5. Attaching Importance to Professional Practice and School-Enterprise Cooperation Courses**

In professional practice courses and school-enterprise cooperation courses, teachers can make full use of the crops planted in the internship bases and professional cooperatives around the school, and students can observe disease symptoms and hazards in the field, so that they can distinguish various signs and symptoms, master disease diagnosis methods, and put theoretical knowledge into practice through the investigation of certain diseases. Students majoring in plant protection can solve practical problems in farmland production by using plant protection websites, "Smart Farming" and "Ask and Answer of Farming" mobile APP software in combination with professional knowledge and actual conditions of farmland. This course will enable students to have a preliminary understanding of the current situation of agricultural production, stimulate their professional interest, and set the goal or ideal of serving agriculture.

#### **4.6. Cultivating Awareness of Scientific Research Innovation**

Well-known experts and outstanding graduates invited from industry to the university can share the needs of scientific research frontier and production practice. In the past three years, 9 scientific research projects of innovation and entrepreneurship training for college students majoring in plant protection have received national support. Six teams were selected to participate in the Hunan Provincial Plant Protection Professional Ability Micro-Landscape Competition with three third prizes, two winning prizes and one winning prize in the general entomology and general plant pathology knowledge competition, so the college won the excellent organization award. In the past three years, the school has organized students to participate in the National College Students' Life Science Innovation and Entrepreneurship Project, the National College Students' Life Science Competition, and the Hunan "Challenge Cup" entrepreneurship project more than 50 times, winning 4 first prizes, 15 second prizes and 23 third prizes.

### **5. CONCLUSION**

There are many ways to cultivate students' professional identity and interest in plant protection. It is a way to strengthen the professional identity and learning interest of freshmen majoring in plant protection through colleges, head teachers, counselors and teachers. Only by establishing professional

identity and stimulating learning interest can students actively learn, and actively integrate with self-development and social development, in order to have a clearer understanding of career planning, which is more conducive to students to become talents needed by society. Taking students as the main body, through professional identification and learning interest guidance exploration, a series of professional guidance methods of "expanding professional cognition – cultivating learning interest – mastering professional knowledge – improving professional quality – acquiring comprehensive ability" have been constructed for the plant protection specialty. At the same time, communication can enhance the relationship between teachers and students, as a life mentor and confidant of students, which is conducive to the further development of the work.

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