

Construction of Edible Fungi Cultivation Course Group under the Background of New Agricultural Science

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Abstract: According to the basic requirements of “new agricultural science”, on the basis of in-depth investigation and Research on the demand of urban agricultural economic and social development for plant production professionals, the edible fungi cultivation curriculum group was seriously revised. The practice teaching system and classroom teaching system were reformed by strengthening the cooperation between schools and enterprises, and the information construction of edible fungi cultivation was featured, for cultivating applied talents with edible fungi cultivation practice skills.

1. Introduction

Edible fungi cultivation has been evaluated as an effective means for poverty alleviation in developing countries due to its possibility of low cost production, high profit and quick return [1, 2]. More and more scholars pay attention to the course education of edible fungi cultivation. Through teaching students the basic theoretical knowledge corresponding to the whole edible fungi industry chain, including edible fungi biology, seed production, cultivation and management, pest prevention and control, preservation and processing, the “new agricultural” innovative and entrepreneurial talents can adapt to the development of edible fungi industry after graduation, They participate in industrial construction actively, which can create greater economic benefits.

In the traditional classroom atmosphere, teachers are regarded as authority, students subject themselves to them without interactions [3], curriculum reform operates within different policy networks that span and extend beyond formal education systems and institutions [4]. As an important engineering discipline, the teaching reform of edible fungi cultivation needs the combination of theory and practice to meet the social demand for talents, such as sustainability, ethics and entrepreneurship [5]. This paper will explore this issue by constructing a faculty-wide curriculum development programme that aims to address the perceived skills gap.

2. Construction of Edible Fungi Cultivation Course Group

2.1 Basic Requirements of New Agricultural Science

Under the background of new agricultural science construction, the construction of edible fungi cultivation curriculum group will speed up the process of agricultural structural reform, and also provide guarantee for the cultivation of more characteristic talents of mycology, especially edible fungi specialty. To promote the edible fungi discipline to be integrated into the framework of the backbone disciplines of agriculture and the mainstream disciplines of biology, and to explore the construction of the training mode of specialized talents serving the local and regional economic construction, the curriculum group should be constructed around the teaching system, practical teaching platform and Ideological and political elements for training more talents for local and national service.

2.2 Construction Mentality of Edible Fungi Cultivation Course Group

The edible fungi discipline is highly applicable, and the cultivation of edible fungi has always been the most practical aspect of the discipline, including the research on the culture matrix formula of edible fungi using local biomass resources according to local conditions, the precise regulation technology of environmental factors for the growth of edible fungi in different regions, the research and integrated application of mechanized, digital and intelligent cultivation technology of edible fungi, In circular agriculture, the cultivation technology of seamless connection with other field crops and horticultural crops. This also requires the construction of edible fungi cultivation curriculum group to continue to undertake the historical responsibility of guiding production practice and industrial innovation on the basis of completing the era mission of building knowledge system and theoretical system. It includes: realizing the deep cooperation between school and enterprise; Optimize the teaching content and curriculum structure; The whole process practice teaching platform of “breeding, fruiting and postharvest” was constructed; Establish effective management and operation mechanism.

To optimize the curriculum group of edible fungi cultivation, teachers and enterprise managements should formulate the practice system of edible mushroom cultivation course together, focusing on strengthening the organic connection of three links of mushroom production: “reproduction, fruiting and post harvest” (Figure 1). On the existing basis, we should further deepen the cooperation of production, teaching and research in and out of school, and build the whole process practice teaching platform. Using the modern Internet of things technology, through the internet teaching to overcome the limitations of practice conditions, form a new model of teacher-student practice: students can publish fungus pictures, introduction text and disease video through the network; They can discuss problems with each other, exchange learning experience and share internship results; Teachers can check WeChat group, official account and QQ group at any time, and solve students' queries and puzzles in time.

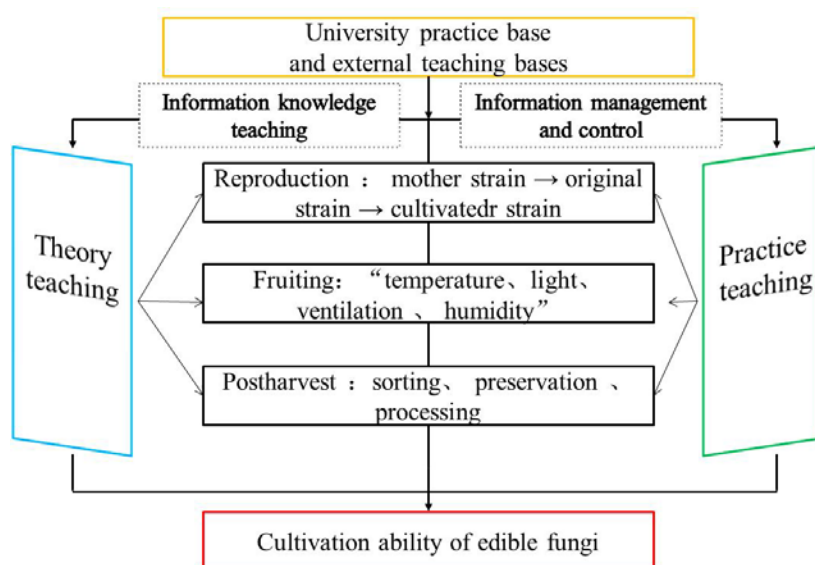


Fig.1 Curriculum Structure of Edible Fungi Cultivation

According to the needs of new agricultural science, we should design and improve the knowledge system and optimize the curriculum structure(Table 1).The curriculum group of edible fungi cultivation is an important part of modern biotechnology applications, which is a novel comprehensive discipline formed on the base of microbiology,biochemistry,genetics, etc.

The purpose of this curriculum group is to make students master basic knowledge of edible fungi; be familiar with and master the production methods of parent, original and cultivated species of edible fungi, the preservation methods and rejuvenation measures of strains; to make students master cultivation techniques of different type of edible fungi; be familiar with prevention methods of diseases and insect pests, be familiar with storing,processing and refreshment techniques of edible fungi products.

Table 1 Curriculum Group Of Edible Fungus Cultivation

Types	Course name	Credits	Credit hours	Semester	Assessment method
Specialized basic courses	Mycology	2	40	3	F
	Edible and Medicinal Fungus Genetic Breeding	5	80	4	F
Specialized core courses	Edible Fungus Cultivation	2.5	50	5	F
	Edible Fungus Pest Control	1.5	30	6	F
Practical courses	Comprehensive experiment of fungus biology	2.5	50	4	S
	Experiment of Edible Fungus Cultivation	2.5	50	6	S
Expansion courses	Preservation and processing of fungus products	2	36	7	F
	Internet of Things technology and intelligent edible fungi	1	16	6	S

Note: F: Formative assessment; S: Summative assessment

2.3 Strengthening of Ideological and Political Elements

Edible mushroom industry plays an important role in poverty alleviation and Rural Revitalization. The course of edible fungus cultivation contains rich moral resources, which is the carrier of carrying

out the basic task of “strengthen moral education and cultivate people”, and realizing the effective integration of Ideological and political education and professional education. The ideological and political teaching in higher education also plays an irreplaceable role to cultivate undergraduates’ innovative ability [6]. Choosing the appropriate ideological and political materials and integrating them into the teaching content of the course can achieve good results. There are many ideological and political breakthrough points: effect of mushroom industry on Chinese poverty alleviation, the story of mushroom entrepreneurs, the protection of wild resources, the awareness of laws and regulations of seed production, the green prevention and control of diseases and insect pests, the combination of mushroom products with large health industries, etc.

3. Conclusion

New agricultural science is the product of the integration of modern information science, life science, emerging engineering and new liberal arts and traditional agricultural science in the new era. Carrying out new agricultural science education and cultivating new agricultural talents are important measures for implementing the rural revitalization strategy. By adjusting the teaching content and teaching methods of edible fungi cultivation course group, while teaching the knowledge of edible fungi, combining with the hot political issues in reality, we can tell the students the principles doing things and socialist belief, and the enthusiasm of students to learn edible fungi cultivation course group is significantly improved.

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