

# THE ROLE AND DEVELOPMENT PROSPECTS OF FOOD SCIENCE AND ENGINEERING DISCIPLINES

Andrew Douglas  
*University of Hawaii, Honolulu.*

**Abstract:** With the continuous improvement of China's economic level, people's quality of life has also been rapidly improved, which has put forward higher requirements for food safety and quality, and more and more attention has been paid to the field of food science and engineering. The discipline of food science and engineering has a long history and is closely related to people's daily lives. Its development is of strategic significance to the sustained and healthy development of our country's national economy. This article explains the important role and development prospects of food science and engineering disciplines based on work experience, with a view to providing reference for other workers.

**Keywords:** Food science and engineering; Education; Development trends

## 1 THE ROLE OF FOOD SCIENCE AND ENGINEERING DISCIPLINES

“Food is the first priority for the people.” Food is the basis for people’s survival and is closely related to national health. Food science plays an important role in the development of our country's national economy and improving people's quality of life. As people have higher and higher requirements for food quality, the food science and engineering major has also received widespread attention. The development of the food science and engineering major will face greater challenges in the future. In the future development process, it is necessary to increase research efforts on food science and engineering, improve the quality of agricultural products through continuous research, and provide necessary theoretical and technical support for the development and innovation of the food industry [1].

### 1.1 Protecting Basic People’s Livelihood Issues

The discipline of food science and engineering has had a major impact on my country's agricultural field. For example, the new hybrid rice varieties and planting techniques studied by Professor Yuan Longping have improved my country's agricultural production level to a certain extent, keeping people in our country and even the world away from hunger. Hybrid rice is one of the A branch of food science and engineering. The discipline of food science and engineering has attracted much attention from the people. (1) In recent years, food safety problems have occurred frequently. Food safety problems will directly affect people's health, reduce consumers' trust in enterprises, cause damage to the economic and social benefits of relevant enterprises, and more seriously, It is very likely to trigger international food trade disputes, affect my country's good image in the world, and cause incalculable losses. (2) Health problems caused by food lacking nutrition or substandard quality will directly affect people’s normal lives and increase the financial and mental burden on families. At present, science and technology can be used to accurately calculate the nutritional value of food, and engineering technology can be used to effectively reduce food nutrient loss and improve food quality, which has played an important role in improving the national physical quality[2-3].

### 1.2 Promote the Effective Solution of “Agriculture, Rural Areas and Farmers” Issues

The fundamental issue of China's modernization is the "agriculture, rural areas and farmers" issues, which are related to the quality of the people and future economic development. In recent years, the state has paid more and more attention to the "agriculture, rural areas and farmers" issues, significantly increased policy support for the "agriculture, rural areas and farmers" issues, and proposed to adhere to the path of agricultural modernization with Chinese characteristics. The road to agricultural modernization requires the support of science and technology to continuously improve food production and quality and drive the sustainable development of agriculture and rural economy. For agricultural science and technology, it is necessary to apply bioengineering expertise to explore new varieties, continuously explore in the genetic field, nanometer field, life field, etc., study new planting and breeding technologies, and improve the scientific and technological content of agricultural products. Food science and technology and engineering disciplines can make agricultural products develop in a market-oriented and scientific direction, continuously increase farmers' income, drive rural economic development, and better solve the "agriculture, rural areas and farmers" issues [4-5].

### 1.3 Make Full Use of Resources

In recent years, our country has advocated building a conservation-oriented society, the core of which is to fully utilize and protect various resources and maximize their benefits. At present, the technical strength of the subject of food

science and engineering is constantly improving, technological revolution and industrial revolution are constantly carried out, new technologies are applied to traditional food subjects, and new technologies are constantly applied to replace traditional food processing methods, laying the foundation for the scientific and technological development of the food industry. and technical basis. Through continuous innovation and upgrading of science and engineering, we can fully utilize resources and promote the healthy development of food science. At present, many colleges and universities have added related disciplines of food science and engineering, which can cultivate a large number of high-quality talents and continuously realize theoretical and technical innovations, allowing this major to cooperate with other related majors to promote the development of the food processing industry [6].

## **2 OVERVIEW OF THE DEVELOPMENT OF CONTEMPORARY FOOD SCIENCE AND ENGINEERING DISCIPLINES**

### **2.1 Rapid Development**

With the continuous improvement of people's living standards in our country, the number of researchers in food science and engineering has increased rapidly, and domestic universities have continued to increase investment in this field. As the number of researchers increases, the quality of the teams gradually improves. Many universities continue to reform teaching methods, explore teaching methods and models suitable for university teachers, and fully improve the quality of talents.

### **2.2 Research Level Continues to Improve**

With the rapid development of food science and engineering disciplines, various universities and research institutions have continued to increase investment in research funds in this area. With sufficient funds and equipment, my country has continued to achieve breakthroughs and innovations in the field of food science and engineering. The number of laboratories built by food companies continues to increase. Compared with previous years, my country's food science and engineering technology disciplines have gradually taken advantage of government policies and corporate projects, providing an important guarantee for the development of this field [7].

### **2.3 Promote the Development of the Food Industry**

The discipline of food science and engineering has overall high adaptability in terms of integration with the food industry. The development of the food industry reflects the great role of the discipline of food science and engineering in promoting the development of the food industry. The food industry has become an important pillar of our country's economic system. The discipline of food science and engineering has continuously promoted the development of the food industry, increased the demand for workers in the industry, and played an important role in the development of the national economy. At the same time, we should continue to learn and learn from foreign advanced experience, and fully integrate theory with production practice. For example, we should apply genetically modified foods in the genetic field to the food industry to promote the continuous emergence of new foods [8].

## **3. DEVELOPMENT PROSPECTS OF FOOD SCIENCE AND ENGINEERING DISCIPLINES**

### **3.1 Strengthen the Complementary Advantages of Cross-Disciplinary Disciplines**

Food science and engineering involves many contents. It is difficult to realize the role of food in society by continuously improving the discipline of food science and engineering. This cannot be achieved by a single discipline of food science and engineering. It is necessary to continuously strengthen cross-cooperation between this discipline and other disciplines, understand the basic characteristics of other disciplines, and seek more development opportunities through cooperation. Currently, many universities and research institutions in our country are applying for national key projects, but most of them are exchanges and cooperation between universities and food schools, and there is a lack of cross-disciplinary and field exchanges. According to the actual situation, many national key research projects in our country generally require cross-field cooperation. If universities or scientific research institutions want to undertake national key projects, they must pay attention to cross-field and cross-disciplinary cooperation. Each discipline can give full play to its own advantages and obtain Make more innovations, continuously break through the limitations of their respective fields in a short period of time, and achieve the long-term development of the discipline itself [9].

### **3.2 Build a High-Level Professional Discipline Platform**

Professional subject platforms are an important guarantee for ensuring subject development and cultivating talents. If you want to cultivate more professional talents in the field of food science and engineering, you must build a high-level professional subject platform. Although my country's investment in food disciplines continues to increase, it still lacks high-level professional discipline platforms. The equipment of some universities and research institutions is relatively old and difficult to integrate with international standards. This has affected my country's independent innovation in the

field of food science to a certain extent. To fully ensure the level of subject development and build a high-level professional subject platform, we can start from colleges and universities, create a strong faculty team, strengthen the construction of the teacher team in the field of food science and technology, and provide students with more advanced equipment and laboratories; in the national food Scientific research institutions should continue to establish national key laboratories, increase capital investment, continue to attract high-quality talents, and strive to improve subject research conditions; for food science research laboratories established by large enterprises, relevant departments should increase their supervision to ensure that Its research direction is in line with national policy requirements [10].

### **3.3 Strengthen the Integration of Theoretical Knowledge and Scientific Research**

my country's discipline construction has always attached great importance to and encouraged the integration of industry, academia and research. Currently, my country's food industry is facing pressures on energy, resources, etc. Under this situation, the development of food disciplines must fully consider the needs of the food industry and integrate industry, academia and research. First of all, we must continue to innovate relevant technologies in the food industry, rationally apply these high and new technologies, continuously change the economic growth model of the food industry through technology, use high and new technologies to continuously develop new foods, and promote the development of food industry product categories in a diversified direction; Secondly, as my country's urbanization process continues to accelerate, the area of cultivated land is gradually eroded and degraded. We must actively introduce high and new technologies to increase unit output and process related products to increase the quantity and quality of food so that resources can continue to meet The current needs of my country's population and economic development.

### **3.4 Pay Attention to Food Quality and Safety**

In recent years, food safety accidents have continued to occur in our country. For example, during the fruit cultivation process, some farmers have used pesticides wantonly in order to reduce the incidence of pests and diseases and increase crop yields to obtain more economic benefits. This has resulted in excessive pesticide residues in food, affecting people. of good health. However, through the development of food science and engineering, high and new technologies can be continuously applied to research new varieties, modify genes, and improve the resistance of crops to diseases and pests. Food unsafe factors are also increasing during product processing. It is necessary to control these unsafe factors through food science and engineering disciplines, discover existing deficiencies in a timely manner, and further develop food science and technology projects. At present, mankind is facing problems such as resource shortage and environmental crisis. my country's food safety and food security are also facing threats. In the future development process of food science and engineering disciplines, it is necessary to integrate with national strategies and deeply analyze the current food problems faced by our country. issues, actively introduce advanced foreign experience, create more forward-looking and strategic policies in this subject area, and strive to promote the sustainable development of my country's food industry.

## **4 CONCLUSION**

At present, human society is facing the major issue of food safety and sustainable development. As an important part of the national economy, the food science and engineering major plays an important role in people's health and quality of life. In the future development, our country's food disciplines will face more challenges and difficulties. Our country's food disciplines must seize the advantages of the discipline according to changes in the social environment, intensify research, continuously innovate technology and methods, improve food research and development and manufacturing technology, and improve the quality of our people. Food safety.

## **COMPETING INTERESTS**

The authors have no relevant financial or non-financial interests to disclose.

## **REFERENCES**

- [1] Wang Yuting, Wang Mingming. A brief analysis of the strategic role and development trends of food science and engineering. *Science, Technology and Economics Tribune*, 2018(26):165.
- [2] Wang Shaoyun, Rao Pingfan. A brief analysis of the strategic role and development trends of food science and engineering disciplines. *Fujian Textile*, 2011(3):40-44.
- [3] Fang Ting, Yu Yahui, Zeng Shaoxiao, et al. Exploration and research on the training model of innovative applied talents - taking food science and engineering as an example. *Food Industry*, 2019(1): 298-300.
- [4] Zhou Wei, Zhang Junhong, Geng Lijing. Investigation on the current situation of life planning of undergraduates majoring in food science—taking the School of Food Science and Engineering of Jinzhou Medical University as an example. *Food Science and Technology and Economics*, 2018(9):102-106 .

- [5] Xing Changrui, Wang Jing, Hao Yining, et al. Reform and practice of virtual simulation teaching model of "Food Chemistry Experiment". *Food Science and Technology and Economics*, 2018(2):116-118.
- [6] He Guidan, Chen Shanshan, Shi Jing. Research on laboratory safety management of food science and engineering majors in colleges and universities. *Contemporary Educational Practice and Teaching Research*, 2018(1):88-89.
- [7] Ma Haile. Research and practice on using multi-disciplinary intersection to improve the innovation ability of food subject students. *Food and Machinery*, 2017(9):213-215.
- [8] Xie Wenpei, Yi Xiangqian, Qi Jing, et al. Preliminary study on the construction of activity teaching model for food science and engineering majors. *Light Industry Science and Technology*, 2017(9):181-182.
- [9] Hao Jiming, Zhang Jing, Deng Chujin, et al. Exploration of scientific research laboratory management in colleges and universities - taking the food science and engineering discipline of Guangdong Ocean University as an example. *Agricultural Products Processing (Journal)*, 2014(18):86 -88.
- [10] Tan Liping. "Tenth Five-Year Plan" Grain Science and Technology Planning and Grain Discipline Major Structure Adjustment. *Grain Science and Technology and Economics*, 2002(5):24-25.