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Thinking and Exploration of Urban Horticulture under Modern Agriculture Background

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Abstract

Nowadays, with the rapid development of urbanization, the traditional agricultural production and development mode has long been unable to meet people's needs for all aspects of agriculture. Compared with the traditional agriculture in the past, modern agriculture is an expression of the latest development form of agriculture. And urban horticulture, as an important part of modern agriculture, is produced with the rapid development of urbanization and industrial modernization, and is an inevitable product of the development of social and economic level to a certain height. Especially with the increasing pressure of work and life in the city, the citizens need more and more important for green and leisure, and the role of urban gardening in urban life is more and more obvious. In this context, this paper will combine urban horticulture with the development theory of modern agriculture, facilities production technology and industrialization management mode as a background. Based on the connotation of urban horticulture, combined with examples, we analyze the development mode and characteristics of urban horticulture, and actively explore the development prospects and countermeasures of urban horticulture in the future.

Keywords

Modern Agriculture; Traditional Agriculture; Urban Gardening; Urbanization.

1. Background

Caused by the effect of the global economy, China has faced population growth problems, reduced cultivation land areas and pressure on grain procurement, such as low resource consumption, poor capita agricultural resources, and low-level grain production science and technology. With the rapid growth of cities today, traditional agriculture has lost its appeal to new farmers. And the development of traditional agriculture is facing huge challenges. Compared to traditional agriculture, modern agriculture is the application of science and technology and modern industry to cover production methods and scientific management methods, which reflects the latest developments in agriculture. Traditional agriculture to modern agriculture, towards a higher level of transformation, has become an irreversible path. Since the reform and opening up of the urban process also accelerated, possession of large tracts of agricultural land, therefore, much of the cultivated land becomes non-agricultural land. Expensive urban land has serious consequences, such as overcrowded urban buildings. Reduce green space environment and degradation. In addition, with the continuous improvement of the living conditions of the residents, people have more free time and seek a better quality of life. For the safety and freshness of agricultural and secondary food and urban landscape as well as in urban and suburban areas using fruit trees, vegetables, flowers and ornamental plants, cultivation and breeding technologies and management methods. For the people of the city created with products, ecology, science, culture, education and innovative values. Urban economy, society, modern agricultural life. It is produced by the rapid development of

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urbanization and modern industrialization and is an inevitable product of some degree of economic and social development.

2. Research Review

As a new stage of agricultural development, modern agriculture has been modernized in education. In different directions with different scholars, and an understanding of agriculture Modernity is also different. Over time, the productivity of modern agriculture has changed steadily.

Zhongwei Zhang (1994) believes that modern agriculture includes not only traditional cultivation and breeding, but also includes modern production processes, circulation and consumption, modernization silk of rural and peasant and other broad categories [1]. Fuxin Jiang (1995) proposed a unified modern agriculture of three systems, namely production system Agricultural and industrial and production products and circulatory systems [2]. In fact, its development is a way to effectively allocate resources, improve agricultural land yields, labor productivity and the rate of use of agricultural resources. Ye Zhang (1999) believes that the development of modern agriculture is a transformation of institutions for innovation and innovation. Impact of the application of science and technology in agriculture [3]. Therefore, the ultimate goal of modern agricultural development is to eliminate waste structures. Two-district-rural economy and the recognition of a modern agricultural system.

Xiaofeng Dai (2002) argues that modern agriculture is the application of modern marketing science. Management science, new concepts, new theories, new methods of organizing agricultural systems [4]. With farmers' marketing, expertise and social transformation, farmers are armed with the knowledge of modern agricultural science and technology, and modern agricultural science and technology that integrates integrated methods. "Integration of agro-industrial trade" of the agricultural sector, raise awareness effective. Agricultural management and the overall economic benefits of industry. Wuxian Tao (2004) distinguishes modern agriculture from traditional agriculture in terms of the proportion of agricultural labor force in the country's labor force. Agricultural investment agricultural labor productivity industrial structure quality and income of farmers ecological environment living conditions of cattle and public infrastructure [5].

Compared with research on modern agriculture at home and abroad, little research has been done on urban horticulture. Currently, there is no specific connotation of urban horticulture widely recognized by professional scholars at home and abroad [6]. For the definition of urban horticulture in accordance with the research guidelines of that article, The author thinks it is a technology of cultivation and propagation, and methods of managing fruit, vegetables, flowers and ornamental plants in urban and the area surrounding the suburban extension, where production, ecology, education, culture, science and innovative value for urban construction Modern agriculture that responds to the economy, society and urban life.

By improving the development of the city and the level of urban life. The traditional agricultural development model is unable to meet people's needs. Farmers need to be able to create a more complete profit model. The urban population is eager to join the agricultural production. The transition to modern agriculture and urban agriculture is rapidly developing. in the background like this urban gardening took place during a historic moment. It became a good balance between the two. Today, the United States, the Netherlands and Japan have developed very well in urban horticulture.

The definition of urban garden first appeared in the 1960s in the United States, and gradually extended to the United Kingdom, France, the Netherlands and Japan and other developed countries [7]. The Food and Agriculture Organization of the United Nations (FAO) proposes horticulture in urban and peri-urban areas in the report of the FAO Program-me for urban and

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Peri-urban horticulture or urban horticulture, UPH for short, refers to all horticulture currently around, and in cities grown for human consumption and for ornamental use. The bank of Botswana defines urban gardening as the cultivation of fruits, herbs and vegetables, urban animal husbandry, and the process is complemented by other support activities such as food processing and distribution, collection and recycling of food waste and water, as well as education, organization, and hire locals.

For urban horticultural development models, there are three basic development models: The focus is primarily on popular science studies. The main task is to disseminate advanced agricultural science and technology. Educate the people on agriculture and improve the agricultural knowledge of the people. The second is a demonstration, mainly including a plant exhibition. Horticulture, nursery, water is mainly used to use advanced agricultural science and technology as a target for propaganda. Guide the continuous development of the horticultural industry. The third is the form of leisure tourism and agricultural development. Its main function is to create and display agricultural landscapes. Reserve tourist attractions to relax the people, and improve the living standards of the people in the city. Residential Needs The town has trained a number of young gardeners at the Brussels Botanic Gardens. This paper examines the development model of Brooklyn Botanic Gardens. Study the history of the development of spatial and landscape design systems for children and describe the gardens discovered, designed mainly for children and crop surveys.

Danfeng Huang and Kai Zhang are used to refer to the experience of the Netherlands. Articles on urban garden development indicate that the Netherlands is a country. In the most densely populated country in the world. Although arable land and biological resources are still scarce, farming is a major source of income. The country is already developed. Analyze the modernity of urban gardening in the Netherlands. Advanced development experience such as greenhouse gardening, flower gardening [8].

Jun Sun (1998) analyzed the nature of urban agricultural development in Japan, including horticulture, and summarized the three forms of urban agricultural development in Japan [9]. The number one destination is agricultural tourism, with many agricultural parks, such as grassland and vineyards. The second is agricultural facilities, mainly using modern science and technology, production of vegetables, Flowers and wood deposits. The third is agriculture with the characteristics, creating an industrial environment with international competitiveness.

Compared to the United Kingdom, France, the Netherlands and other developed countries, the concept of horticulture. Burial is deeply rooted in every family. Starting from the education of children, horticultural research in Chinese cities is professional slow to start. High quality horticultural flower shows, popular horticultural forums and more are few and far between. Since the reform and opening up of the country, Chinese scholars have been interested in and learning of the country's advanced ideas. Developed, and gradually mixed with the urban character of China to develop horticulture in China's cities.

To explore the concept of urban gardening, Yuliang Peng and Hamilton RL (2008) proposed urban gardening. It is a gap in the higher boundaries of the city and surrounding areas based on urban civilization based on economic, ecological and social solidarity. Take full advantage of the big city, it can provide advanced horticultural activities of horticultural production and business enterprises [10]. It is a regional horticultural system that provides unnecessary resources, materials and services for large cities. Lingbai Yao and Haixia Han (2017) point out that urban horticulture is about providing a place for people to understand horticulture. Experience rural life and leisure tourism using natural ecosystems, horticultural landscapes and environmental resources, and the integration of horticultural production, business activities, rural culture and agricultural life based on modern science and technology in urban areas [11].

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As for the functions and characteristics of urban horticulture, Yuliang Peng put forward four functions of urban horticulture in the new thinking of the development of Urban horticulture in China, that is, urban and rural mutual infiltration development, intensive production input, industrial management and intangible output [10]. Guangguo Jin and Jialing Zhang (2016) analyzed and pointed out the role of urban horticulture, including promoting coordinated development between urban and rural areas, promoting urban greening construction, and enhancing urban residents' interest in agriculture [12].

As for the development model of urban horticulture, Gangying Shi and Xiuwei Qian explored how to build a garden environment in a small square meter space of the family garden in the article "Thinking of small Garden and Large Ecology", which provided a development model for the development of urban horticulture [13]. Yongqing Li mainly discussed the development of balcony horticulture, through the different balcony orientation to explore the planting model of urban balcony horticulture [14]. Ying Zhou discussed three modes of domestic gardening in China: balcony mode, roof mode and courtyard mode [15].

As for the expression patterns of urban horticulture that are at different levels of urban horticulture, the expression patterns of urban horticulture at different levels will vary according to the level of urban development in China. Urban horticulture is widespread in the first and second tier cities. This includes community parks, residential green spaces, botanical gardens, large, medium and small parks, family gardens and experience gardens. Compared to 1st and 2nd tier cities, 3rd tier cities and smaller towns are more concerned with horticulture in urban areas than in creating green spaces for residential areas such as small parks, family gardens and focal gardens. Xiao Xie and Hao Yin thrive on exploring the spontaneous garden features of the big city for example. Using field survey and mapping methods in Beijing, spontaneous outdoor garden activities in investigation and data collection. To summarize the first class cities such as Beijing. The City Park Expressway provides a reference for the urban residential area of the green building [16]. Fan Zhang analyzes the advantages of the Chun warehousing industry in this article. From the perspective of the horticultural industry discuss the development model and terms Recommendations of the horticultural industry in Changchun. And provides a reference for horticultural development in the suburbs [17]. Based on the concept of urban horticultural development in third-tier cities such as Zhumadian, Sun Haixia developed cultivate crops according to unique urban farming methods. Horticulture, ecological recreation and creative agriculture consider the advantages of facilities and resources in line with the needs of China's integrated urban and rural development.

Growing good horticulture in their urban areas to develop and set an example for other countries. China is a large commercial agricultural country, and a birthplace of plants and cultures. The most beautiful ancient art. Compared with foreign development in horticulture, China has maintained the tradition of cultivating agricultural crops from ancient times the generation of grandparents. Therefore, it is easy to root modern garden plants in the city. At the same time, China's urbanization has been developing steadily and rapidly, which is beneficial to horticultural development in the city more compared to abroad. Chinese scholars study urban horticulture more thoroughly, focusing on horticulture. Specific features such as home gardening, terrace gardening, gardening, etc., and many countries are turning to gardening as a model.

Problems in urban horticulture in China. At present, China is in the phase of developed countries. And the level of science and technology still needs to change compared to developed countries. As a result, there is no capacity for horticulture in the city. And the research of Chinese scholars on the technical capabilities of urban horticulture has not yet grown. Compared with foreign scholars. Meanwhile, research by Chinese scholars on urban horticultural theory is still relatively recent. And has not yet established a system of central

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planning theory that needs further improvement, concluding that most of China focuses on agricultural technology is still lagging behind other countries.

3. Relevant Concepts and Theoretical Basis

3.1. Relevant Concept Elaboration

Modern agriculture is agriculture that has been developed on the basis of modern industry. Contemporary science and technology are now can being learned in the technology and in the classroom. It was developed agriculture flourished in the era of industrial capitalism and only occurred after World War II. Modern agriculture is a new stage of agricultural development. Each scholar has different ideas and research and understands in many different ways about modern agriculture. In addition, over time, the weeds of modern agriculture change over time as new things come in handy.

Modern agriculture is an active historical concept. It's uncertain but something like this concrete is an important step in the history of agricultural development. The process of shifting from traditional agriculture to modern agriculture in other developed countries, including the improvement of agricultural production equipment and technologies. The use of advanced science and technology and materials used in the implementation of work related to mechanics, power generation, information, biochemical production. At the same time, the modernization and expertise of agricultural organizations and their management, transformation of social regions and agricultural production organizations.

Urban horticulture is the name of a disciplined profession, this document assumes that it is in the construction area of the city and the expansion of the surrounding suburbs, the use of fruit trees, vegetables, flowers and ornamental trees in cultivation and breeding techniques and management methods, for the people of the city have a culture. Serve the urban economy, society, life of modern kind of agriculture.

3.2. The Emergence and Development of Urban Horticulture

In recent years, there have been interventions to promote urban-rural integration in urban and rural areas. Infiltrate and integrate, the new concept of "urban horticulture" began to apply to urban planning and construction. In October 2017, Chinese President Xi Jinping formally adopted a rural living strategy. Continue to hold the 19th National Congress, which includes: accelerating the transformation into power, old and aspiring work, develop the industrial economy. Modern agriculture, rural industry development, aspirations and aspirations. In-depth card, focusing on agricultural products and actions. "Internet ten rural transport" makes the best rural tourism, culture, innovation. A beautiful rural economy electricity promotes the development of rural industrial integration. Encourage the innovation of agricultural enterprises. Encourage evidence-based enterprises in rural areas. The concept of urban horticultural development and design is in line with needs and targets of urban horticulture in rural construction and rehabilitation. An “urban plantation” in Shangsha District, Huan Province has officially opened. The program was jointly announced and launched by the Changsha City Administration and Administration Bureau, Law Enforcement, Hunan Agricultural University, the Chinese Institute of Agricultural Sciences, the University of Environment and Life Sciences in Fro-claw, Poland, and the University of Catania, Italy. The start of the project means "urban plantations" have been officially tested and delivered supplements in Changsha.

In today's society, urbanization is developing rapidly, but the rate of urban greening is very low. Therefore, people's living environment is not better, but worse. Given this background, people began to pay attention to agriculture and gardens. The more people like to get out of the city, to the suburbs, to breathe the fresh air. On this basis, urban agricultural gardens and leisure and

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sightseeing parks came into being. In addition, not only the emergence of urban gardens, and horticultural facilities, information, modernization is also improving.

3.3. Types and Characteristics of Urban Horticulture

3.3.1. Types of Urban Gardening

From urban gardening research, urban landscaping is divided into product categories, where to buy land holding mode and development size.

By product type urban horticulture can be divided into vegetables, flowers and fruits, which can generate industry and create economic value, horticulture (including city centers, suburbs and central suburbs) and urban gardens (outer suburbs), which have more closely combined freedom, rent, government land and individual agreements, etc., and according to the size of the development.

3.3.2. Characteristics of Urban Gardening

(1) Unity of urban and rural pattern

The development of urban horticulture gradually breaks production patterns in urban and rural areas. City and horticulture are inseparable and mutually influenced. Generally speaking, horticulture can promote the green development of cities. On the other hand, the rapid development of cities can also promote the progress of horticulture. We should have a better understanding of the relationship between rural and urban areas so that they can penetrate and promote each other for better development.

(2) high concentration of inputs

Compared to traditional horticulture, urban horticulture presents a higher demand for inputs. Production allocation and the management system of the inputs at the same time, urban horticulture has the absolute advantages of science and technology, labor force, facilities, and other resources, which encourages urban horticulture to be intensive production.

(3) Modern industrialization

Compared with agriculture, urban production level and technological level are very advanced. On the other hand, there are obvious differences between their business models. Urban horticulture differs from traditional horticulture in that urban horticulture mainly uses leading enterprises to drive their development, rather than developing independently. In addition, urban horticulturists take socialized service as the premise of a modern management model.

(4) Production facilities and information technology

With the rapid development of modern agriculture, agricultural technology is developing in the direction of high and new. This will greatly promote the improvement of the level of urban horticulture facilities. In addition, labor costs are particularly high in cities compared with rural areas. If urban gardening still requires a large number of people to manage and plant, this is very unrealistic. Therefore, most modern urban horticulture use information management, mechanization management, automation management. For example, through the computer system to control the temperature, moisture, light intensity and other environmental conditions in the city garden. In addition, people can carry out seedling breeding, planting, transplanting, picking, packaging, sales and other processes of horticultural crops through mechanical equipment.

(5) Comprehensive benefit operation

Compared with traditional horticulture, urban horticulture does not affect the development of the main industry, but develops towards the second and third industries. This is one of the fundamental reasons why urban horticulture can develop rapidly in cities. Urban horticulture can be combined with urban agriculture and tourism for common and coordinated development. Urban horticulture can not only beautify the urban environment, but also bring

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some horticultural crops and products to people, which has never brought certain economic income. In addition, selling ornamental tickets related to urban gardening and providing venues for events such as banquets can also bring certain economic benefits to the city. In addition to economic benefits, urban gardening can also bring ecological benefits. For example, horticultural appreciation, horticultural popular science, horticultural tourism, horticultural beautification and so on.

4. The Development Strategy of Urban Horticulture at the Macro-level

Nowadays, Europe, the United States, Pak and other countries and regions have begun experimenting with horticultural landscapes of urban centers. For example, the White House Mini Vegetable Garden. The rooftop garden at Galeries Lafayette in Paris was created in 2016, and indoor mushroom cultivation on Austin Logro farm has already begun horticulture in the heart of the city. Because the city center must be the most prosperous area. But it is also the area with the most traffic. This causes a lot of dust and vehicle exhaust. It will worsen the air quality in the city center and affect people's mood. Therefore, in the city center of the building's interior, exterior, roof and roof, the center of residential gardens, playgrounds of primary and secondary schools, etc. Partly horticulture, not only absorb exhaust gases, make air pure can also decorate the natural environment, people's mood is happy. Meanwhile, the production of agricultural products can provide food supplements, and let people be beautiful and delicious.

However, the land in the city center was too expensive, and the commercial construction value in the city is higher compared to the value of agricultural production. Therefore, it is impossible to have a large plot of land in the city center to develop a horticultural landscape at the same time. The development of the city center area is quite fast. Population and density of high-rise buildings and the land use state is always dynamic. Inconsistent with the actual situation of providing land for urban horticulture to be planted in the city center. Therefore, it is very important to guide the development of landscaping in the city center.

5. The Development Strategy of Urban Horticulture at the Micro-level

With the rapid development of urbanization, urban people gradually stay away from nature and break away from agriculture, leading to home gardening to become one of the main leisure ways for more and more urban people. Urban residents like to plant vegetables, fruit trees, flowers and plants in some scattered Spaces, including homes, courtyards, or in front and back of houses, balconies and roofs. Not only can beautify the living environment, create a green way of life, but also can enjoy rural fun, self-sufficient some agricultural products. According to the existing research of home gardening for urban residents in China, the types of home gardening can be classified into two categories and ten small categories.

Through the field investigation of the current situation of home gardening in China, the cultivation mode of home gardening is divided into five modes: container cultivation, three-dimensional wrong layer cultivation, hanging, hanging, climbing cultivation, soilless hydroponic cultivation and open-ground cultivation.

The green areas of the community are the sum of the areas, where the residents of the main community live and carry out social activities. The green space environment of a community affects the appearance of individuals, communities as a whole, and even cities. Today, many people in the community use the community green space to create a simple home or use the public green space as their backyard. Create a small private vegetable garden. This has created a chaotic environment for the whole community and the phenomenon of inconsistency between neighboring countries, due to the seizure of public green space. Then, the community green space development strategy is derived from two aspects of environmental change. Surround the green areas of the community and improve neighborly relations.

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6. Conclusion

Urban facility horticulture fully excavates the biological characteristics of facility crops, uses cultivation technology to achieve the extraordinary biological performance characteristics of crops, and obtains the dual functions of production and viewing, which can be used as the basic elements of viewing, picking, leisure walking and landscape construction in sightseeing and leisure agriculture. Urban facility gardening effectively combines crop cultivation technology with the ornamental and artistic quality of plants, deduces the novel, magnificent and colorful view, and meeting the spiritual needs of urban residents for diversified horticultural products and sightseeing and leisure. At present, the creativity of urban facility horticulture needs to be strengthened, and the cultivation mode and technical diversity urgently need to be strengthened, so as to better integrate into the connotation of sightseeing and leisure agriculture. In terms of technology, soilless cultivation technology is the core cultivation technology of urban facility horticulture, and the biological characteristics of facility crops are the basis of the innovation of urban facility cultivation mode, and the focus should be on the above two aspects. In addition to the research and development from the cultivation mode and technology, we should also integrate the technology of urban facility horticulture and sightseeing and leisure agriculture, so that the urban facility horticulture and sightseeing and leisure agriculture elements complement each other, improve and enrich the connotation and extension of sightseeing and leisure agriculture.

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