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Research on Rural Plant Landscape in Western Sichuan Based on CiteSpace

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Abstract: *As a landscape showing the rural style, the rural landscape plant has very important economic and social significance for its development and utilization. The plant resources in the western Sichuan countryside are rich and diverse. With the development of society, there have been a lot of research results. The article analyzes the journals and dissertations included in CNKI, conducts visual analysis with the help of CiteSpace software research hotspots, summarizes the species diversity of landscape plant resources, the application of landscape plant resources, and the design of landscape plant resources in rural western Sichuan. Research directions such as methods and landscape plant protection.*

Keywords:*Western Sichuan Village*; *landscape plants*; *Visual Analysis*

In the 19th National Congress of the Communist Party of China, the Party put forward the strategy of rural revitalization. Under this strategy, the countryside has developed rapidly. In the construction of the new look of the countryside, the rural landscape occupies an important position, representing the style and image of a village, and high-quality rural plants. Landscape can increase the attractiveness of villages and promote the construction and revitalization of villages. Compared with the urban plant landscape, the rural plant landscape has more comprehensive characteristics such as ecological, industrial, and ornamental, and has multiple values such as economy, culture, society, ecology, and aesthetics (Ge, & Li, 2020). This paper uses CiteSpace software to sort out the research on the development and utilization of rural landscape plant resources in my country in recent years. It is expected that by sorting out the literature on rural landscape plant resources in western Sichuan, the development direction will be analyzed, and provide relevant research fields. Some references and references.

Literature Data Analysis

Research Methods and Analytical Materials

As a visual analysis software, CiteSpace is used to count the target literature. It is used to sort out the research through various visual maps and predict the future development direction. The software version selected in this article is CiteSpace5.6.R5. The counting function of words can make accurate classification and statistics of the current research on rural plants, and at the same time, it can point out the development direction and shortcomings of rural plant research in the future.

The literature data in this paper is obtained from China National Knowledge Infrastructure (CNKI), the re-

trieval span is from 2000 to 2021, the search item is "subject", and the search term is "rural plants." After removing the papers, news, conferences, and other literature with low relevance and reference to the research topic, 193 valid pieces of literature were finally obtained, including 51 master's thesis and 142 journal papers. The relevant data graph analysis is exported through CNKI (Figure 1).

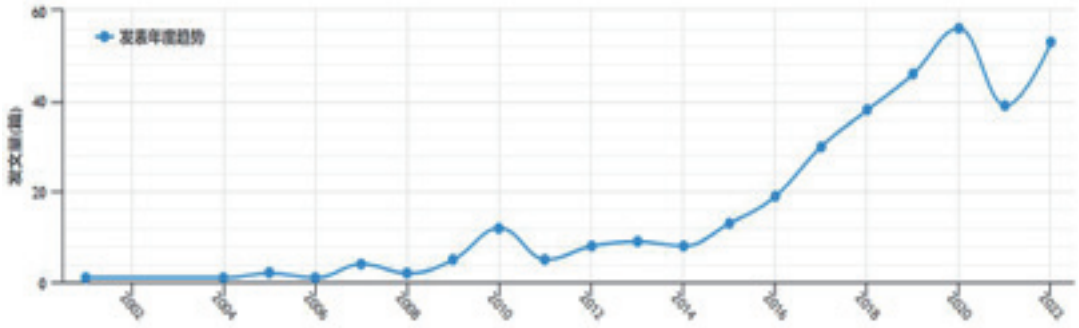

Figure 1. Number of documents and time

The statistical table of years and number of published articles shown in Figure 1 presents a line graph. From 2000 to 2021, the overall circulation of articles shows an upward trend. Among them, 2014-2020 showed a significant growth trend, which shows that 2014-2020 is a rising period for rural plant landscape research. A large number of scholars study this field, and the number of published papers continues to grow. However, in 2020-2021, or due to external reasons, the number of papers published during this period will decrease accordingly.

Research Status at Home and Abroad

In recent years, ecological protection has become a hot topic. For the research on rural plant landscape, our country first started in the 1990s, based on the rural landscape design and rural gathering tribal landscape. Because the research on the rural landscape and rural tribal landscape has strong regional characteristics, the research on rural plant landscape by Chinese scholars also has strong regional characteristics. In "The Construction of Rural Ecological Plant Landscape in Southern Jiangsu", the rural plant landscape is divided into four categories: village plant landscape, farmland plant landscape, road plant landscape, water and river plant landscape through the elements that constitute the rural landscape and summarizes the various types of plant landscapes. Function, the village plant landscape is used to shield the house, beautify the environment, and economic benefits; the main function of the farmland plant landscape is to prevent soil erosion, create biological habitats, and protect and adjust the agricultural ecosystem; the road plant landscape is mainly used for landscape shaping. The establishment of isolation brings pollution prevention; the water and river plant landscape has various functions such as environmental protection, cargo transportation, and aesthetic value. At the same time, the paper divides the meaning of rural village plant landscape into broad and narrow senses, including courtyard, front, back, house and road plant landscape in the village in a broad sense; in a narrow sense, it refers to the front of the house separated by the courtyard wall. Behind the house, beside the house, and other agricultural outdoor environments plant landscape. In the article "Discussion on Rural Plant Landscape Design", the rural plant landscape is divided into highways, scenic spots, wetland parks, rock gardens, farmhouses, etc. from the perspective of pure landscape according to people's needs for rural landscapes. In

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"Ecological Research on Rural Settlement Landscape", it is pointed out that the planting of rural villages is the same as that of traditional Chinese buildings and often refers to the traditional Chinese Feng Shui theory. Feng Shui trees, fixed base trees, Feng Shui forests, etc., forming a landscape of "mountain forests cover the sun" and "mao forests cultivate bamboos."

The research on rural landscape in foreign countries is earlier than that in China. The research on the rural landscape by foreign scholars does not conduct separate research on plant landscape but takes the overall landscape as the focus of research. The concept of "eco-village" proposed by Danish scholar Gilman integrates human activities into the natural environment; Australian ecologists Mollison and Holmgren proposed "permaculture village", through the use of biological resources, plant resources, and species diversity as much as possible to achieve sustainable land use and energy efficiency and recycling.

Research Results and Analysis

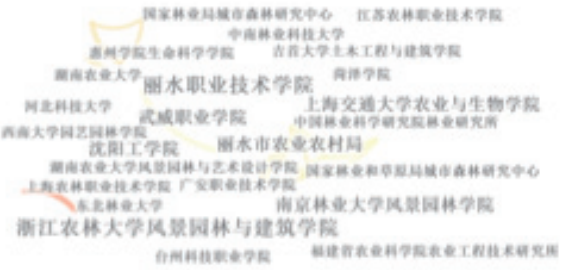

Figure 2. Institutional co-occurrence map



Figure 3. Author co-occurrence graph

In the analysis content column of CiteSpace, select "author" and "institution" to get the co-occurrence map of authors and research institutions (Figure 2 and Figure 3). Import 193 literature into CiteSpace software, after basic deduplication, select "keywords" in the analysis content column, the time is 2000-2021, and visualize the analysis results to obtain a keyword co-occurrence diagram (Figure 2), to a certain extent, the keywords represent the research hotspots in a field. According to the keyword map, it can be seen that the keywords with the same high frequency as "rural plants" include "plant configuration", "plant landscape design", "plants" Community", "Rural Landscape", etc. According to the arrangement of literature and the display of keywords, the rural plant landscape is divided into four parts: rural landscape plant diversity, rural landscape plant application, western Sichuan rural landscape plant design method, and rural landscape plant protection.



Figure 4. Keyword co-occurrence graph

Landscape Plant Diversity in Western Sichuan

Many researchers at home and abroad have discovered the important role of plant species diversity in rural plant landscapes at a very early time. With the rapid development of modern urbanization, while the species in rural plant landscapes play an important role, their species diversity is affected by many natural and human factors. The study of the dynamic relationship is very important. The diversity of rural plant species has both the originality of the ecological environment and the artificiality of urban settlements, which has important research value (Luo, Li, Li, Zheng, & Peng, 2017). For the research on plant diversity in rural landscapes, the number of documents on rural plant diversity research in the southern region is more than that in the north. To analyze and count the types and quantities of plants, and select various values to measure the diversity characteristics of rural plants (Ran, et al., 2006). Scholars such as Zhu Zunling proposed to optimize the diversity of rural plant landscapes by adjusting the community structure, reducing the degree of human interference, and increasing the cultivation of native tree species (Zhu, et al., 2011). The species diversity of rural plants has both the primitive characteristics of the ecological environment and the artificial characteristics of urban settlements (Luo, et al., 2017), which is a comprehensive concept. Although a large number of scholars have studied it in China, the depth is not enough. There is no in-depth exploration of the relationship between rural plant species diversity and rural culture, the whole rural industry, and national policies for rural areas. Further research is needed.

The natural conditions in Western Sichuan are very complex and diverse. It has a variety of topographic features such as plateau, mountain plain, and canyon. The altitude ranges from Gongga mountain with the highest altitude of 7,556 meters to Jinsha River Valley with the lowest altitude of 360 meters. Due to the special topographic conditions, it has all climatic zones from the subtropical zone to the cold zone. There are many kinds of plants and abundant resource plants, According to statistics, there are about 5,000 kinds of plants in Western Sichuan. According to different economic uses, the resource plants in Western Sichuan are divided into eight categories: medicinal plants, oil plants, aromatic oil plants, starch and gum powder plants, fiber plants, tannin plants, garden flowers and other resource plants (Yin,1983), Medicinal plants are the most abundant among all kinds of resource plants in Western Sichuan;oil plants have high economic value; aromatic oil plants are not only drugs, but also important raw materials for food and light industry;Wild starch in western Sichuan can replace grain starch and is widely used in casting, explosives, control and medicine, while colloidal starch is mainly used in oil extraction and geological departments as flushing fluid;Fiber plants, as common plants in daily life, are important raw materials commonly used in textile and paper making;Tannins are an important raw material for the leather industry;Other types include turpentine and paint, which can be harvested from turpentine and lacquer;Among them, the wild garden flowers and plants in the western Sichuan area are very rich, and there are many ornamental plants, such as Cuckoo, Magnolia, Orchidaceae, Compositae, Rosaceae, Poppyaceae, Oriotidae, Trichoderma, etc. It is pointed out that in the development of When using plant resources in western Sichuan, it is necessary to deal with the relationship between utilization and protection. Researchers usually conduct field analysis on a certain type of plant in a specific rural area. Scholars such as Liu Guangli and Chen Qibing have investigated the woody coleus plant resources in western Sichuan and concluded that there is wild coleus in the western Sichuan Basin. There are 78 species of leaf plants in 33 families, 56 genera and 78 species, which are divided into spring leaf plants, autumn leaf plants, evergreen leaf plants, etc. and different types of colorful leaf plants have different landscape charac-

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teristics and landscaping applications. And development and put forward suggestions such as strengthening resource investigation, rational protection planning, speeding up the cultivation process, and exploring comprehensive industrial development paths (Liu, et al., 2010).

The Application of Rural Landscape Plants in Western Sichuan

At present, most of the rural areas in my country are unreasonable for a plant application, and there are many problems such as low ecological benefits, destruction of biodiversity, and insufficient landscape aesthetics. Due to the large differences in climate, soil, and biological factors in different regions, the tree species planted in rural areas and the application of tree species are very important.

The application of rural plants in the western Sichuan region in the landscape has formed the characteristics of the rural landscape in western Sichuan, and the forest plant community landscape formed is a unique landscape on the western Sichuan plain. Domestic scholars' research on Linpan is mainly divided into three aspects: the direction of ecology, the direction of spatial morphology of Lipan, and the direction of protection of Lipan. Duan Feng, Liu Tianhou, and other scholars (Duan, Liu, 2004) analyzed the natural ecological and social-ecological significance of Lipan. The plant community of Linpan maintains the balance between Lipan and the animals and plants in the whole system. The Lipan residents provide a good living environment and abundant production and living materials. Yang Yu should conduct a more detailed summary of the plant research of forest plates in the "Sichuan Forest Plant Community Type Classification and Its Community Optimization Reconstruction Research. The community conducts investigations, divides the full community of forest plates into five vegetation groups, 11 vegetation types, and 107 groups, and also statistics on the composition, community structure, and the number and characteristics of the community. Based on summarizing the characteristics of the plant community in Lipan in western Sichuan, suggestions, and strategies for the structure of the plant community in Lipan in western Sichuan were also put forward (Yang, 2010). Cai Jun, Chen Qibing, and other scholars pointed out in the article "Research on the Construction Model of Linpan and Plant Selection in Western Sichuan" that the core of Linpan is planted. It is also the basis for the development of Linpan culture (Ren, et al., 2010). This paper also summarizes the principles to be followed for the plants selected in Lipan. First of all, the overall optimization should be carried out to continue the personality of Linpan's context and maintain a diverse and comprehensive development.

Design Method of Rural Landscape Plants in Western Sichuan

With the rapid development of modern cities and society and the rapid growth of population, rural landscapes have a different attraction to modern people compared with urban landscapes. In the rural plant landscape design, the application of plants in the rural landscape is a relatively large application problem in the practice of rural landscape design. For the research of Chinese scholars in this field, it can be subdivided into several sub-topics, such as the selection and configuration of rural plants, the construction of native plant landscapes, and the space design of plant landscapes. Scholars such as Ren Binbin and Liu Jiawei conducted field investigations and analyzed the composition and diversity of plant species, and summed up several plant configuration patterns that can provide reference to meet the greening needs of different places and different functions (Ren, et al., 2010 & Liu, & Zhang, 2018). In addition, Xu Mengying and other scholars surveyed the current

villages and villages and summarized the importance of rural plants in the design of rural landscapes plant (Xu , et al., 2017). Scholars such as Zhang Lele, Ma Xiaoyuan, Wu Yunchao, and He Miao proposed corresponding and reasonable design methods according to the different styles of different villages (Wu, &Wang, 2018 & He, et al., 2017 & Zhang, 2019. & Ma, 2019).

Lipan landscape in western Sichuan is the expression of rural landscape plants in western Sichuan. A large number of scholars in my country have also researched the design of Lipan. Most of the research on the spatial form of Linpan was carried out after the earthquake. The influence of Linpan makes people gradually realize the landscape characteristics of Linpan in western Sichuan. In "Discussion on the Diversity of Rural Housing Construction in Chengdu Post-disaster Reconstruction,", engineer Wu Jin proposed the transformation of Linpan in western Sichuan, such as adapting measures to local conditions, flexible layout, digging deeply into the cultural connotation of local characteristics, highlighting rural regional characteristics and the diversity of architectural appearance. The method of development and development points out the way for the construction and development of Lipan. Fan Yanzhi adopts the method of macro-to-micro, from the whole to the local to study the landscape of forest pans. At the macro level, he points out that the design of forest pans should follow nature, pay equal attention to protection and development, and follow the principle of unified and step-by-step implementation. The landscape design of the pan should be comprehensively considered from various perspectives such as point, line, plane, shape, and the supporting infrastructure of the landscape design of the forest (Fan, 2009). Zhao Junfen studied the landscape design of Linpan in rural areas in western Sichuan from the perspectives of rural settlements and rural settlements based on the example of post-disaster reconstruction in rural areas. Based on the characteristics of traditional Linpan areas, combined with the actual situation, problems were solved, to promote Lipan. The development of landscape (Zhao, 2009). Yin Le, Cai Jun, and others divided the landscape of Linpan into two parts: architectural landscape pattern and spatial landscape pattern in "The Sustainable Development Approach of Linpan Landscape in Western Sichuan - Taking Huayuan Town in Pi County as an example." Based on the basic design, the ancient Shu culture, the cultural resources of the ancient towns in the western Sichuan area, and the traditional food and folk festivals in the western Sichuan area were also incorporated into the planning and design of the Lipan landscape in western Sichuan (Yin,& Cai, 2011).

Landscape Plant Protection in Western Sichuan

As an indispensable part of rural landscape design, plants have the characteristics of preventing pollution, purifying the air, maintaining the locality, and regulating the climate which should be protected. With the development of urbanization in rural areas, many rural ecosystems have been destroyed. In recent years, many researchers have paid more and more attention to this problem. Liu Yaliang pointed out that prominent problems such as vegetation degradation, local characteristic plant landscape, and loss of plant culture have appeared in the development of rural areas (Liu, 2011). The protection of plants in my country mainly focuses on two aspects, namely, the protection of plant varieties and plant communities, and the control of plant diseases and insect pests. Deng Haijuan summarized the difficulties faced in the protection of characteristic animals and plants in the new countryside and proposed corresponding measures (Deng, 2005). However, the number of domestic research literature on plant protection issues in this field is still relatively small, and a complete protection system has not yet been established. The measures and methods for plant protection need to be further developed and improved.

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Lipan is one of the representative plant landscapes in western Sichuan. The protection of Linpan is to protect a unique landscape and ecological environment in rural areas in western Sichuan. The protection of Linpan in western Sichuan reflects the protection of rural landscape plants in western Sichuan. The protection of rural plant villages and the ecological environment is the premise of building high-quality rural plant landscapes. In the article "Research on the Protection and Development of the Forest Pan System in Western Sichuan", based on the study of the morphological characteristics of the forest pan, Zhang Ying put forward a detailed plan for the protection of the forest pan by analyzing the significance and value of the forest pan in western Sichuan: Determining the reasonable forest pan The number, scale, distribution density and farming radius of the forest plate; preserve the distribution pattern of the forest plate; improve the infrastructure and transportation system of the forest plate; green housing under the ecosystem; different types of industrial model transformation and sustainable development economic model; the application of information technology in Lipan, etc. (Zhang, 2008). Lin Shiqing's "Western Sichuan Linpan Protection and Rural Architecture Innovation" starts from the strategic perspective of Linpan protection, analyzes the status quo and changing trend of Chengdu Linpan and traditional rural buildings, through the protection and development of traditional vernacular architecture, it is concluded that For the protection of forest pans in western Sichuan, it must adapt to the environmental space that modern people live in, and at the same time, it must be beneficial to the income of farmers in western Sichuan, so that the forest pans in rural areas of western Sichuan can be effectively protected. Scholars Cai Shaotian pointed out three important issues that should be solved in the protection planning of forest pans in the "Planning for the Protection of Forest Pans in the Construction of New Rural Areas"(Cai, 2007). First, not only should the traditional functions of forest pans be preserved, but also new functions should be provided. which can adapt to the needs of modern production and life; secondly, the infrastructure of Lipan, including Linpan's drainage facilities, domestic sewage treatment facilities, and biogas septic tank facilities, are all important parts of Linpan's planning; the building should be in harmony with the environment of Lipan, and local materials should be used as much as possible in the building. If it is not in harmony with the surrounding architectural environment, the Lipan will not be well protected accordingly. Regarding the research on forest pans in western Sichuan, Professor Chen Qibing's "Research on Landscape Resource Protection and Development Model of Western Sichuan Forest Pan" is the most systematic. In his work, the formation and changes of basic forest pans, the classification of forest pans, and the characteristics of forest pans are the most systematic. It also includes the ecological value, economic value, and social value of the forest pan. Finally, according to the value of Linpan in western Sichuan, the paper also puts forward the protection ideas, technical means, and corresponding protection mode of Linpan, which points out the direction for the protection of Linpan in western Sichuan and the future development of rural landscape in western Sichuan (Chen, 2011).

Research Review and Prospects

Research Review

Scholars in our country have some research on the field of rural plant landscape, which has guiding and reference significance for our future research on specific rural or specific landscape plants. However, the research foundation on rural plant protection is relatively weak and lacks practical measures, which needs to be further solved in future research.

With the proposal and implementation of the rural revitalization strategy, the construction of new rural areas in my country has accelerated, and the rural and rural areas have developed rapidly. Among them, optimizing and improving the appearance of rural areas and rural areas has become the top priority in rural revitalization. The above research has excellent guiding significance for the actual construction of rural and rural areas.

Future Outlook

Excavation of Rural Plant Resources

Rural plants are diverse and ecological. To build a natural rural plant landscape, we must first pay attention to the naturalness of landscape plants. Cultivate suitable plants according to the local environment of the countryside, which can not only ensure the diversity and ecological stability of rural landscape plants but also ensure the stability of rural landscape plants. It can also greatly improve the sharpness and recognition of the area. Use science and technology to select plants suitable for planting in the region, conduct research on them, and implement professional technical measures such as seed collection and cutting to promote and mass-produce suitable plants with high survival rates.

Create a Characteristic Rural Plant Landscape

With the construction of the rural plant landscape, tourists can feel the unique cultural charm of the rural area and the distinctive rural appearance of the region. But with the simultaneous development of most of the villages, some blind imitation, copying and over-urbanization are inevitable. The development of rural landscapes plant should strengthen their uniqueness and cannot blindly imitate it. Different rural areas have different rural historical and cultural environments, as well as customs and habits. You should start with the planting of characteristic plants in your village, and then analyze and summarize different types of planting. While paying attention to economic benefits and landscape viewing, we should also pay attention to the characteristics and ecological benefits of rural plant landscapes. In addition, it should not be excessively urbanized. Compared with the small scale and strong aggregation of the urban landscape, the rural landscape design has the characteristics of wide range, high fragmentation, and strong regionality. Therefore, when constructing and creating plant landscapes in rural areas The development concept of the beautiful countryside should be followed, and more emphasis should be placed on productivity and productivity.

Conclusion

With the rapid development and progress of modern society, compared with urban landscape design, rural landscape design has a different attraction to people. In this case, the process of rural landscape design has accelerated and developed rapidly. Plants play an important role in rural landscape design, not only to optimize and beautify the environment but also to enhance the distinctiveness of rural areas through the uniqueness of regional plants. The rural plant landscape is both ecological and ornamental. With the rapid development of today's rural tourism, it can promote farmers' income and agricultural level, thereby promoting the development of the region. From the perspective of environmental protection, the protection and construction of

rural plant landscapes have received great attention from people. While constructing and improving the plant landscape, it is necessary to focus on the overall protection and protect the tangible appearance characteristics and intangible culture of the plant community. While designing and transforming, try to protect the integrity of the composition and structure of the plant community as much as possible. During the transformation, trees and herbs commonly used in other areas or urban landscaping can also be appropriately introduced, to improve the species that enter the plant landscape community in the countryside. Diversity and landscape richness.

Based on the CiteSpace software, this paper quantitatively analyzes the domestic literature related to rural plants in the past 20 years, and sorts out four directions of rural landscape plant diversity, rural landscape plant application, rural landscape plant design method, and rural landscape plant protection. Facing the current close exchanges between disciplines, aiming at the many problems faced by the construction of rural plant landscapes, it is impossible to solve them perfectly by a single discipline. In the current era of science and technology, rural plant landscape design can combine information technology, science and technology, multimedia technology, and other technical means to summarize and summarize rural landscape plants, survey the soil in the region and introduce other suitable landscape plant species to improve the richness of the plant landscape in rural areas, combined with the aesthetics of contemporary people, increases the interest of tourists. At the same time, my country has indeed achieved some results in the research on landscapes plants in the rural areas of western Sichuan. However, due to some factors such as funds and time, the research is not deep enough, and there are still deficiencies, which need to be further explored and studied.

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