

## Research on Innovative Methods of Traditional Chinese Medicine Resources Based on Circular Economy Theory

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**Abstract:** Traditional Chinese medicine originates from natural materials, and has the characteristics of renewable, low resource consumption, and less environmental pollution. It is a typical green, circular, and economical industry. Traditional Chinese medicine resources are the foundation of the development of the traditional Chinese medicine industry, and the research methods of traditional Chinese medicine resources are gradually forming a multidisciplinary interdisciplinary system with computer science, molecular biology and bioinformatics as the main research methods. The development of traditional Chinese medicine can be promoted only if the resources of traditional Chinese medicine can be effectively utilized, the rational development can ensure sustainable development and recycling, and the various potential values of traditional Chinese medicine can be gradually developed. Due to the scarcity of natural traditional Chinese medicine resources, in order to achieve sustainable development and protect natural resources, we must produce products that can replace these resources through existing technology based on the theory of circular economy. Attempts to develop resources through comprehensive planning can improve the utilization of resources.

### 1. Introduction

With the upsurge of “returning to nature” worldwide, people's demand for traditional Chinese medicine is increasing, which brings unlimited opportunities to the development of traditional Chinese medicine in my country, and also brings great challenges to traditional Chinese medicine resources. The introduction of new methods in the research of traditional Chinese medicine resources will play an important role in promoting the development of the discipline [1]. Traditional Chinese medicine resources are widely distributed in my country, with abundant reserves and diverse varieties, and their development and utilization are closely related to the ecosystem. However, large-scale reclamation and pioneering destroy natural ecosystems, and various environments such as mountains, forests and grasslands are out of balance, and the normal circulation structure of organisms is disrupted. As a result, some traditional Chinese medicine resources have lost their living conditions, decreased in quantity and quality, and were polluted. exacerbated. The recycling of traditional Chinese medicine resources is the research content of traditional Chinese medicine in my country, and it is also the material basis for the development of the domestic pharmaceutical industry in my country. Its importance is self-evident [2]. The pollution of the quality of traditional Chinese medicine resources is not a new problem. In recent years, there have been frequent occurrences of excessive heavy metals in Chinese patent medicines exported from traditional Chinese medicines. A number of Chinese medicine companies were ordered to return to the country when the heavy metal content exceeded the standard when exporting Chinese medicine products. Natural resources are limited. In order to achieve sustainable development, there are very few resources that can be developed within a certain period of time. However, with the development of human beings, the demand for materials has been increasing, which leads to more and more natural resources. Less and more precious, so we should save resources, actively look for alternative resources and produce new resources [3]. By evaluating the current situation of the rational development and utilization of traditional Chinese medicine

resources and ecological environmental protection, and analyzing the characteristics of traditional Chinese medicine resources and their influencing factors on the development and utilization of the ecological environment, it is of great practical significance to build a reasonable recycling model of traditional Chinese medicine resources [4].

## **2. Research Background and Significance**

### **2.1 Research Background**

my country's traditional Chinese medicine industry has experienced a development process from manual workshops and small-scale industrial enterprises to modern industrial enterprises. In my country, traditional Chinese medicine resources can meet the needs of many aspects of people's daily life. It can be used for food, health care, skin care, seasoning, etc. There are many types of traditional Chinese medicine resources, and there are many ways to use them. Circular economy is aimed at the circulation of traditional Chinese medicine industry, and the circulation of traditional Chinese medicine resources is the content of sustainable utilization of traditional Chinese medicine resources. However, the circular economy of the Chinese medicine industry is a circular model of "Chinese medicine resources - Chinese medicine products - renewable resources", and the research on the circular economy of the Chinese medicine industry cannot be separated from the research on the recycling of Chinese medicine resources [6]. TCM resources are the material basis for TCM to demonstrate its broad and profound theories, and the premise and guarantee for the development of TCM in my country. Constructing a recycling utilization model of traditional Chinese medicine resources can realize the rational use of traditional Chinese medicine resources to meet the growing needs of human beings, and at the same time protect the ecological environment and promote ecological balance. A large amount of organic matter in Chinese medicinal materials is exported to the farmland ecosystem. With the increase of the planting years of medicinal materials, the crop rotation is single, the fertilization is unreasonable, the proportion of nutrient elements is unbalanced, and the soil fertility declines year by year, resulting in lower raw material yield, quality and economic returns. [7].

Due to the limitation of ancient science and technology, people only know a few functions of many traditional Chinese medicine resources, and the development, production and utilization of traditional Chinese medicine are also limited. In modern society, through high-tech scientific and technological analysis, our team has more new research and understanding of traditional Chinese medicinal materials, and can also apply them to more aspects [8]. The main contradiction of economic development in the 21st century has changed from the continuous improvement of labor productivity to the substantial increase of natural resource productivity. Therefore, the concept of space in circular economy will span ecosystems, resource systems, environmental systems, various industry internal systems and industrial systems, as well as socio-economic systems.

### **2.2 Research Significance**

Traditional Chinese medicine is the treasure of the Chinese nation, the inheritance and symbol of national wisdom and culture, and an important part of my country's pharmaceutical industry. However, with the rapid population growth and the development of the traditional Chinese medicine industry, the demand for traditional Chinese medicine resources is also increasing. There has also been a major breakthrough in the development and utilization of traditional Chinese medicine resources. From the previous single traditional mining method to now, there are more scientific and rational ways to maximize resource utilization [9]. The circular economy of the traditional Chinese medicine industry is based on applied economics. Therefore, it is very meaningful to discuss the circular economy of the traditional Chinese medicine industry by using the basic theory of economics. In recent years, some scholars have discussed the related issues of circular economy in the traditional Chinese medicine industry from the perspective of basic economics. According to the current planting mode and development and utilization ideas of traditional Chinese medicine resources, it is difficult for the existence of traditional Chinese

medicine resources to meet the development of traditional Chinese medicine and the long-term needs of the people. In the process of utilization of traditional Chinese medicinal materials, medicinal parts only account for a small part of plants, and the wastes generated by medicinal material production bases are mainly non-medicinal parts, resulting in low utilization rate of medicinal plant by-products [10].

Because the development of modern industry is still relatively backward, the development of traditional Chinese medicine resources is not perfect. However, with the development of science and technology, the deep processing industry cluster of traditional Chinese medicine resources represented by the production of Chinese patent medicine preparations has achieved rapid development in recent years, occupying the entire pharmaceutical industry in my country. One-third of the industrial sector has received great attention from the whole society. In the previous production process, people's awareness of the protection of traditional Chinese medicine resources was weak, the ecological environment was severely damaged, and more and more traditional Chinese medicine resources were endangered and faced with depletion. The abuse of pesticides and chemical fertilizers is common, resulting in high content of heavy metals in Chinese medicinal materials, which directly affects the safety and effectiveness of medicinal materials, and then seriously affects the quality of medicinal materials. Through the research and analysis of various traditional Chinese medicine resources, we can make their production process more scientific and reasonable without waste, improve the utilization rate of traditional Chinese medicine resources, realize the expansion of the industrial chain of traditional Chinese medicine resources production, and make the development of traditional Chinese medicine better.

### 3. Innovative Methods of Traditional Chinese Medicine Resources Based on the Theory of Circular Economy

#### 3.1 The Origin of Circular Economy Theory

Humans have been interacting with nature since the beginning of their birth, and constantly asking for various resources from the living environment. In coordinating urban and rural development, coordinating regional development, coordinating economic and social development, coordinating the harmonious development of man and nature, and coordinating domestic development and opening to the outside world, we must pay special attention to the relationship between man and nature. Circular economy is the abbreviation of material closed-loop flow economy. The idea of circular economy can be traced back to the era of the rise of the trend of environmental protection. The early human production activities were relatively primitive and simple, so the degree of environmental pollution and ecological damage was not obvious. The circular economy flow chart is shown in Figure 1.

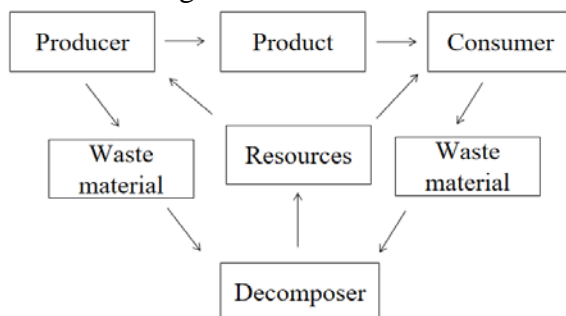


Fig.1 Circular Economy Flow Chart

With the continuous progress and development of science and technology, the ability of human beings to understand and transform nature has been continuously strengthened, and gradually formed a high-input and high-consumption of resources as a means, a high speed of development as a way, and a high enjoyment of life as the goal. way of life. Research on the relationship between man and nature has always been an important proposition for human beings to settle down. In

dealing with the relationship with nature, human beings have gone through three stages: the stage of worshiping nature, the stage of conquering nature and the stage of coordinating nature. Figure 2 shows the mechanism of action between factors in the circular economy system.

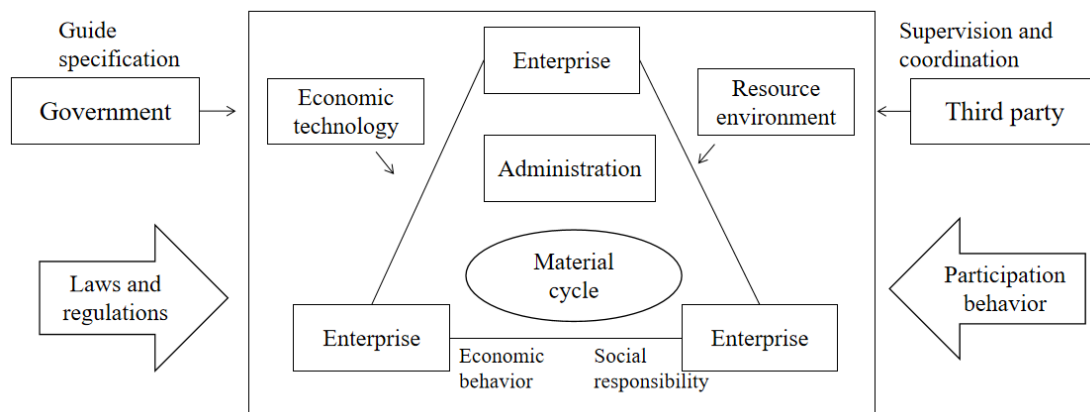


Fig.2 The Mechanism of Interaction between Factors in the Circular Economy System

The environmental movement is mainly concerned with the ecological consequences of economic activities, and the governance of the economic operating mechanism itself has always fallen behind his research vision. Nowadays, human beings are more and more aware that the root cause of the increasingly serious problems of contemporary resources and environment lies in the linear economic model characterized by high exploitation, low utilization and high emission since the industrialization movement. Therefore, it is proposed that human society should establish a closed material cycle in the future. A closed-loop economy characterized by flow, so as to achieve benign development of the environment and economy. Humans, who regard science and technology as a weapon to conquer nature, lack a deep understanding of nature at this time, and regard nature as an inexhaustible material library that can be squandered and a huge trash can that can throw filth. The large-scale conquest of nature finally led to a large-scale revenge of nature. At present, the resources consumed by human beings have far exceeded the carrying capacity of the ecology, and some countries even have an “ecological deficit”. Therefore, changing the development mode has gradually become a social consensus, and it is a major issue that cannot be avoided in the country and the world at present.

### 3.2 Countermeasures and Suggestions to Ensure the Operation of the Circular Economy Development Model of the Traditional Chinese Medicine Industry

The utilization rate of traditional Chinese medicine waste residue is low, resulting in a serious waste of resources. Traditional Chinese medicine residues are rich in fiber, polysaccharide, protein and other organic substances and trace elements. The economic activities of human beings must follow the laws of natural ecology, use the laws of ecology instead of the laws of mechanics to guide the economic activities of human society, exploit and recycle resources as little as possible, reduce the impact of human economic activities on the natural environment, and maintain ecological balance. . Facts educate and warn people that it is wrong to view the natural world as the opposite of human beings or to be dominated, and only rational use of nature can sustain and develop the civilization created by human beings. The circular economy of traditional Chinese medicine industry saves traditional Chinese medicine resources by improving the production process, increasing the utilization rate of traditional Chinese medicine dregs, reducing waste discharge, and re-investing renewable resources into production. Circular economy is to transform the open material flow pattern of “resource consumption, product, waste discharge” in the past into a closed-loop material flow pattern of “resource consumption, product, and renewable resources”. Its purpose is to improve the utilization efficiency of ecological resources.

The goal of human science and technology and economic development should be strategically shifted to coordinating the relationship between man and nature, and human beings should enter a new stage of harmonious development between man and nature. Traditional Chinese medicine

residues are generally wet materials. It is extremely perishable, and random disposal will seriously pollute the environment and bring adverse effects on people's lives. At the technical level, circular economy requires enterprises to extend the production chain vertically, from the production of products to the recycling, disposal and regeneration of waste products; at the macro level, it requires the entire social technology system to be networked, which is the realization of cross-industry recycling of resources and comprehensive industrialized and harmless treatment of waste. Human beings should give full play to their ingenuity, constantly elevate their realm, improve their own quality, and reach the ideological consensus of "common development between man and nature". They should not only pay attention to the needs of the generation, but also care about inter-generational fairness, so as to ensure that human beings can live with nature. Harmony and harmony, symbiosis and common prosperity. If the traditional Chinese medicine industry wants to develop a mature circular economy model, it needs technical support, whether it is the internal production process of enterprises, or the flow of material and energy between enterprises and industries.

#### **4. Conclusions**

Due to the lack of understanding of the pollution sources affecting the quality of traditional Chinese medicine in the past, and the lack of relevant safety standard systems that can be specifically implemented by reference, traditional Chinese medicine resources are vulnerable to different degrees of pollution during production and processing, which affects the quality of traditional Chinese medicine and hinders the realization of traditional Chinese medicine going abroad. internationalization goals. The chemical research of traditional Chinese medicine resources has the significance of traditional Chinese medicine for the development of traditional Chinese medicine in my country, and the limited resources have to make us save resources, realize the recycling of traditional Chinese medicine resources, increase the research on various resources, animals, plants and minerals, improve the utilization rate of traditional Chinese medicine resources, research has found that all kinds of animal and plant resources that are on the verge of extinction can be replaced, and all the effects of developing resources in all aspects are a good way to save resources and recycle them. The protection of traditional Chinese medicine resources is an important national strategy, and the development of traditional Chinese medicine resources requires the joint promotion of the whole society. The production method of resource recycling not only allows us to use more resources, but also allows our descendants to have these resources, and can also vigorously develop the traditional Chinese medicine resource industry.

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