

# Research on the Inheritance and Application of the Twenty-Four Solar Terms Culture in the Design of Cultural and Creative Products — Taking Velvet Hairpin as an Example

Luyao Che<sup>1</sup>

<sup>1</sup> *Hubei Institute of Fine Arts, Wuhan, Hubei, China*

## ABSTRACT

The twenty-four solar terms are a timing system used by ancient Chinese people. The Chinese have divided a zodiac year into 24 parts and given them names based on a time system. Labeling and using the twenty-four solar terms means that China not only retains its own elements and characteristics, but also maintains consistency with the world rhythm. This twenty-four solar terms timing system plays a very important role in agricultural production, which is closely related to the emergence of the twenty-four solar terms. After its formation, it became an important guide for agricultural production. It has a very important cultural identity value, and the core values and cosmology of Chinese civilization contained therein are important aspects that distinguish Chinese civilization from other civilizations, and even become an important carrier of cultural identity. It also influenced the clothing, food, housing, and transportation of ancient people, and even cultural concepts. There is a must to research and extract the connotation elements of the twenty-four solar terms, and apply them to cultural and creative products. There is also a necessity to extract the form beauty and artistic elements of hairpins from their shape, pattern, and color, and restructure and process them. It is hoped to inherit and innovate the twenty-four solar term culture through innovatively applying the elements and connotation of twenty-four solar terms in the design of cultural and creative products.

**Keywords:** *Twenty-four solar terms culture, Cultural and creative products, Hairpin.*

## 1. INTRODUCTION

With the increasing globalization of economy, culture, and politics, competition between countries presents an invisible and sharp sword, namely cultural soft power. The Chinese nation stands out in the long river of world history, thus forming a unique culture unique to the Chinese nation. Among so many national treasures, the formation of the twenty-four solar terms culture has gone through thousands of years of continuous reproduction and accumulation. The courage and wisdom of ancient Chinese ancestors have been promoted and demonstrated in this important culture. Behind the twenty-four solar terms cultural concept, there is a profound cultural connotation, which is not only a farming calendar, but also a human way of life. China has been a major

agricultural country since ancient times. The Chinese people in ancient times tested the feasibility of the twenty-four solar terms through repeated practice, so the actual value of the twenty-four solar terms can be promoted. The designers have applied the cultural characteristics of the solar terms obtained from the twenty-four solar terms to modern design. From a design perspective, the extracted cultural characteristics promote product design, increase the narrative and intrinsic aspects of the product, and improve the prosperity of the twenty-four solar terms culture. From a social perspective, it promotes production and life, is conducive to cultural prosperity and inheritance. Finally, from an individual perspective, it has become a starting point for learning and familiarizing oneself with traditional culture. The

practical knowledge system of the twenty-four solar terms culture is unique to the Chinese people.

By analyzing and extracting characteristic factors from its culture, the twenty-four solar terms culture can be visually symbolized, transformed into a design language, and applied to the design of cultural and creative products.

## **2. OVERVIEW OF THE TWENTY-FOUR SOLAR TERMS CULTURE**

The twenty-four solar terms are a significant temporal symbol formed in ancient Chinese agricultural activities, reflecting the harmonious relationship between humans and nature. This article will elaborate on the origin and history, development and evolution, inheritance methods and approaches, cultural values and significance, tourism development and utilization, agricultural applications and contributions, as well as educational inheritance and promotion of the twenty-four solar terms, in order to comprehensively understand the connotation and inheritance value of the twenty-four solar terms culture.

### ***2.1 Origin and Development***

The twenty-four solar terms are a practice and knowledge system formed in ancient China by observing the annual movement of the sun. In ancient China, the annual trajectory of the sun on the ecliptic was divided into 24 equal parts, each of which was further divided into a "solar term". Finally, they are commonly referred to as the "24 Sun" concept, which can be used to identify the patterns of climate, season, and phenology changes throughout the year. The design of daily life and agricultural activities can be based on the 24 Sun concept, which accompanies China's agricultural civilization. The twenty-four solar terms culture is a model of China's unique cosmology and natural view of excellent civilization achievements, reflecting the philosophy, life consciousness, cultural spirit, and way of life of harmonious coexistence between humans and nature. It has been passed down for thousands of years and is a very excellent cultural heritage that can continue to be accepted.

The development and evolution of the concept of the twenty-four solar terms culture have two characteristics: firstly, twenty-four solar terms culture gradually realizes the integration of practical systems and production and life,

presenting rich cultural expressions; Secondly, the division of time is gradually institutionalized and refined.

### ***2.2 Inheritance Significance***

By designing the concept of the twenty-four solar terms culture as visual symbols, excellent emotional communication effects can be achieved. Visual symbols play a mediating and bonding role in audience emotional communication. After the visualization and symbolization of the twenty-four solar terms culture, the manipulation and exploration have stimulated modern people's longing and profound contemplation of the twenty-four solar terms.

As a highly educational agricultural calendar, the twenty-four solar terms culture, within a specific geographical range, has condensed the wisdom of ancient Chinese generations and become a deep emotional exchange between individuals and groups. It preserves the purest twenty-four solar terms culture. With the development of industrialization, individuals no longer attach too much importance to and rely on the twenty-four solar terms culture. But this does not mean that the role of the twenty-four solar terms culture will be weakened or declined, and the promotion of humanity will definitely use the wisdom of our ancestors from scratch. The twenty-four solar terms culture is based on China's unique geographical range and has been used to current times. It covers all aspects of daily life, and the twenty-four solar terms culture can stimulate people's emotions and improve the cultural quality of Chinese people. Therefore, the study of the twenty-four solar terms culture is of great significance.

The development of the twenty-four solar terms culture has lasted for over 2,000 years. The reason why it can develop is because it is static. The understanding and analysis of the solar terms, innovative design strategies, and expansion of research methods can attract more and more people to pay attention to and analyze the twenty-four solar terms culture. Studying the visual symbolization of the twenty-four solar terms culture can also bring the public closer to the twenty-four solar terms culture. The twenty-four solar terms culture can not only enter the learning and life of modern Chinese people, but also guide the development of agriculture. To a certain extent, it can cultivate the economy through the prosperity of culture, bring huge benefits to the economy,

promote the development of cultural and creative industries, and contribute to social progress.

### **3. RESEARCH ON THE DESIGN PRACTICE OF TWENTY-FOUR SOLAR TERMS CULTURE IN CULTURAL AND CREATIVE PRODUCT DESIGN**

The twenty-four solar terms are a significant temporal symbol formed in ancient Chinese agricultural activities, reflecting the harmonious relationship between humans and nature. With the development of society, cultural and creative products are increasingly attracting people's attention and love. Integrating the twenty-four solar terms culture into the design practice of cultural and creative products not only inherits and promotes excellent traditional Chinese culture, but also injects unique cultural connotations and characteristics into cultural and creative products, improving their added value and attractiveness. This article will explore the application and expression of the twenty-four solar terms culture in cultural and creative product design from the perspective of design practice.

#### ***3.1 Research Innovation Points of the Topic***

Arranging agricultural activities according to natural laws is a common phenomenon among every farming nation, so the phenomenon of solar terms is not unique to China. Although the West is not aware of China's twenty-four solar terms culture, the December calendar system in Western countries is very similar to the twenty-four solar terms. The 12 months already have the function of determining the agricultural season and solar terms. That is to say, adding the Chinese solar calendar to the December calendar system is the twenty-four solar terms culture. Adding a solar term system to the Western December calendar system would be a bit redundant. Undoubtedly, China is the only country in the world that has formed a rich cultural connotation of the twenty-four solar terms system.

Nowadays, in addition to protection, the culture of the twenty-four solar terms also needs to be recreated. Especially under the conditions of modern industrialization and urbanization, while adapting to the spiritual and living needs of modern people, new forms of dissemination and expression must be used. The traditional wisdom included in the precious cultural heritage left by our ancestors

must be refined, disseminated, sublimated, and inherited. Under the current social conditions, the twenty-four solar terms have been given new life and meaning. However, this work not only needs to be completed by agricultural historians, but also requires the joint participation of the art, communication, and cultural creative sectors. In modern society, nation tide culture is more and more popular. On holidays and on streets, many people can always be seen wearing Hanfu, which is becoming more and more daily. Now it is no longer a "strange" behavior to go out in Hanfu.

In the last two years, "Story of Yanxi Palace" was a hit. In the drama, the queen and concubines of the harem often wore velvet flowers as their headwear. The luxurious style of velvet flowers gradually brought them into the public eye.

#### ***3.2 Sources of Inspiration***

Combining the culture of the twenty-four solar terms with velvet, the author has selected the flowers represented by each solar term in the twenty-four solar terms, and designed solar term symbols on the hairpin to combine the two. It is hoped that the twenty-four solar terms and traditional velvet flower making handicrafts can be promoted and inherited.

##### ***3.2.1 Overview of Velvet Design***

###### ***3.2.1.1 The Development of Velvet Flower History***

The predecessor of velvet flower was the hairpin flower that appeared in the Qin Dynasty. In the Qin Dynasty, Emperor Qin Shi Huang requested that all concubines in the harem wear floral decorations, which were the earliest form of hairpin flowers. But at that time, it was only used as a decoration for the imperial concubine. After the establishment of the Tang Dynasty, society became stable both inside and outside, and people's taste, aesthetic requirements, and taste in life also improved. At that time, the flower hairpin has a short flowering period, a single color, and may shed leaves and juice when inserted in the hair. At this time, velvet flowers have gained more favor among many types of artificial flowers due to their symbolic meaning of "prosperity". However, at that time, velvet flowers could only be worn by noble women, with certain class requirements. From the Song Dynasty to the Ming and Qing dynasties, the production of velvet flowers and other hairpin

flowers gradually shifted from official workshops to folk handicraft workshops. Every handicraft workshop has a family workshop system and is not strictly standardized, so most popular velvet flower works are colorful and diverse in form.

Although various production techniques have basically matured since the inheritance of velvet flowers, they have not achieved good development and have instead been subject to new constraints. The main reasons are as follows:

Firstly, there is no successor because there is no heir. Velvet flower has failed to apply for national intangible heritage, which is not only related to the velvet flower, but also the biggest question of whether all traditional handicrafts can continue to be passed down.

Secondly, modern trends have gradually changed people's aesthetics. Due to the unique types and materials, velvet flowers are usually worn as headwear or corsage, but these accessories are not very compatible with daily clothing. Moreover, the price of velvet flowers is relatively high, their practicality is relatively low, and their substitutability is high, so people are more inclined to choose accessories with stronger daily necessities for purchase.

Thirdly, the scope of velvet flower sales is small. As Taobao is currently the platform with the widest audience, the sales of velvet flower are not as good as expected. This shows that the audience of velvet flower is not wide, and most buyers directly customize to workshops, such as collaborating with TV drama producers or fashion brands. However, these do not necessarily mean that velvet flowers are popular, as ordinary consumers generally do not intentionally purchase related products. The sales scope of velvet flowers mainly targets a portion of high-end consumers and enthusiasts of traditional culture.

Fourthly, the velvet flower process is complex and time-consuming, and its production process is too complex. It requires 10 steps and relies entirely on manual production, which cannot be replaced by machines. It is inefficient, time-consuming, and cannot be produced on a large scale. In today's fast-paced life, especially the consumer group of velvet flowers is not very stable, the waiting time for production is long, and the price is expensive, all of which are very unfavorable for the sales of velvet flowers.

### 3.2.1.2 The Production Process of Velvet Flowers

As a major handicraft, the technique of making velvet flowers is also very unique. Velvet flowers are made from natural silk as raw materials, and the production method is very special. A velvet flower needs to go through dozens of steps of preparation and production to complete.

The first is to boil the silk by soaking it in cold water and then cooking it with alkaline water to ensure its toughness.

The second is to dye cooked silk with dyes.

The third is to burn the silk with a low flame of charcoal until it is annealed and softened.

The fourth is to rolling down, arranging and fixing the cooked silk on wooden utensils, then twisting a section of copper wire into a spiral shape, and then using scissors to cut suitable cooked velvet, holding both ends of the copper wire with both hands and repeatedly twisting and rubbing until a complete velvet strip is formed.

The fifth is to sharpen and use scissors to process the velvet strips to the desired angle.

The sixth is to pass flowers, using tweezers to combine the pointed velvet strips and configure them into three-dimensional velvet products.

The seventh is to combine, wrapping the various parts of the finished velvet flower together with QQ thread to form a complete velvet flower.

Current product analysis of velvet flowers: Due to the high cost of raw materials and complex manufacturing processes, velvet flower products are generally more expensive, and the target audience for consumers is relatively small. Their practicality in real life is not high, and they are not essential items in people's lives. Therefore, the velvet flower market is not very prosperous now.

### 3.2.2 Innovative Methods for Velvet Design

#### 3.2.2.1 Innovation

Combining the twenty-four solar terms culture with traditional velvet flowers, each velvet flower represents the flowers of each solar term in the twenty-four solar terms, and the hairpin body of each hairpin is designed with seasonal patterns based on the twenty-four solar terms. The hairpin body is carved with wood, making each hairpin

unique and full of the characteristics of each solar term.

### 3.2.2.2 *Inheritance*

The velvet hairpin adopts design elements with the characteristics of each solar term in the twenty-four solar terms, making each hairpin full of solar term characteristics. In this way, the designers hope to make the twenty-four solar terms culture more easily understood by everyone, and also promote China's intangible cultural heritage traditional velvet to the public. It is hoped that it can be better known to everyone and preserve its inheritance.

## 3.3 *Design Positioning*

Design service crowd: nation tide lovers, velvet flower lovers, people interested in the twenty-four solar terms culture. Combining velvet flowers with the twenty-four solar terms can inherit the twenty-four solar terms culture and velvet flower craftsmanship.

## 3.4 *Sketching Creativity*

Sketching creativity is a fast and a flexible way of expressing ideas, which can help designers transform their ideas into visual forms in a short period of time. Sketching creativity typically uses simple lines and shapes to express design concepts, and can be modified and adjusted at any time. The designers explore the best solution by drawing a large number of sketches.

### 3.4.1 *Sketching Exploration*

The followings are some sketching explorations. ("Figure 1", "Figure 2", and "Figure 3")



Figure 1 A headband and hairpin inspired by the twenty-four solar terms.



Figure 2 A moon-shaped fan inspired by the twenty-four solar terms.



Figure 3 A mirror face pattern inspired by the twenty-four solar terms.

### 3.4.2 *Sketch Optimization*

The author tries to make some efforts on the combination of flowers corresponding to each solar term and wooden hairpins designed with seasonal patterns. The following "Figure 4" shows some design results made by the author.

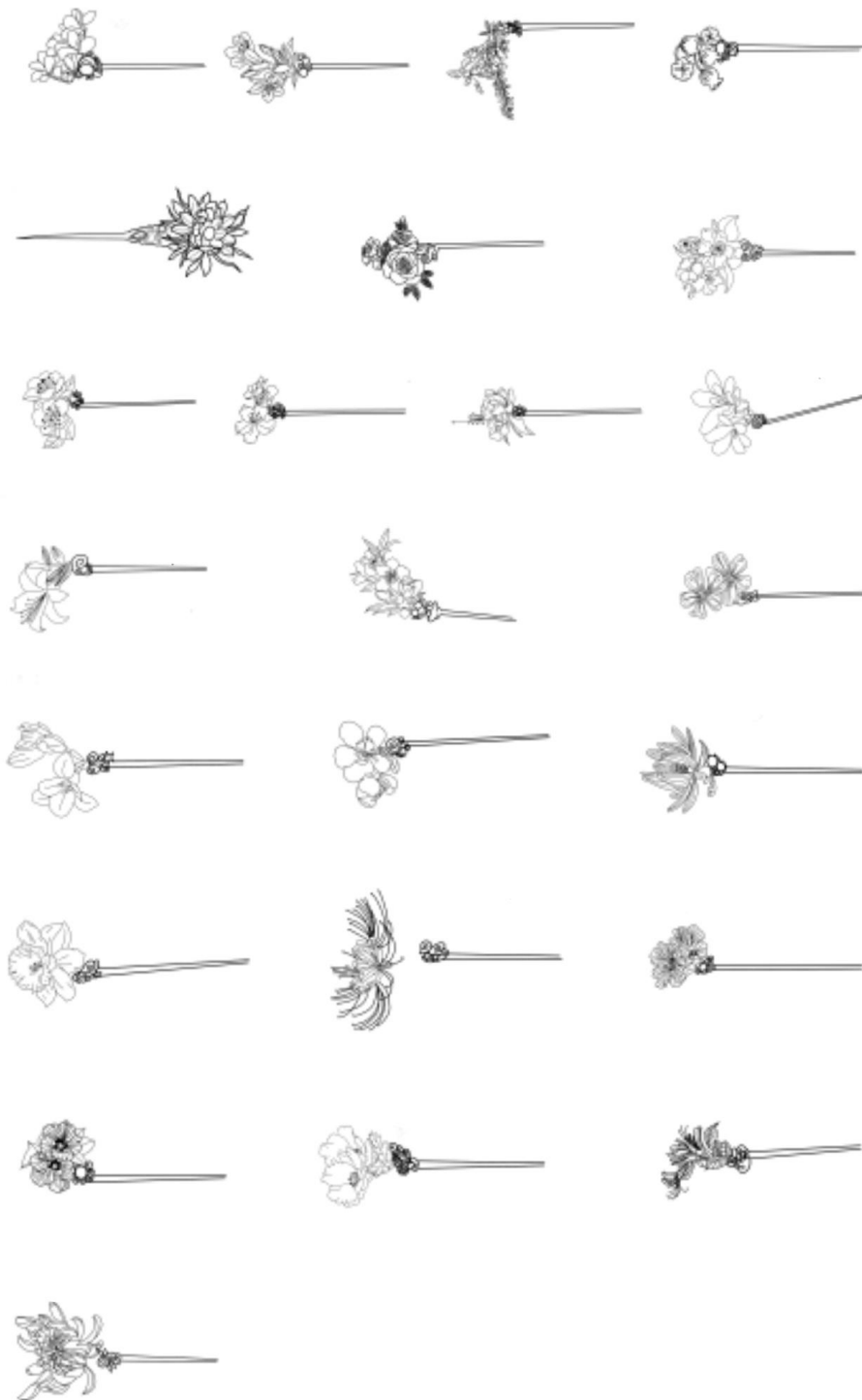


Figure 4 Some examples of the combination of flowers corresponding to each solar term and wooden hairpins designed with seasonal patterns.

### 3.5 Scheme Design

In the initial stage of scheme design, it is necessary to clarify the objectives of the scheme. This includes understanding the customer's needs,

determining the purpose of the solution, and defining the criteria for success. Goal setting is the foundation of all scheme design work, which can help people clarify the direction of the scheme and ensure that our work is always on the right track.

### 3.5.1 Form Design

The following is a combination of velvet hairpin designs (“Figure 5”).



Figure 5 Some examples of velvet hairpin designs.

### 3.5.2 Dimensional Analysis

The length of the wooden hairpin is about 15cm.

The size of the velvet flower is controlled within 8cm × 8cm.

### 3.5.3 Pattern Design

The hairpin body design for each solar term is different, and is symbolically designed according to the characteristics of the solar term. (“Figure 6”)



Figure 6 Hairpin body design.

### 3.6 Presentation of Renderings

The velvet flowers (“Figure 7”) and hairpins (“Figure 8”) are displayed according to four seasons.



Figure 7 Velvet flowers of the four seasons.



Figure 8 Hairpins of the four seasons.



### 3.7 Sample Production Process

After completing the sample production process, it is necessary to summarize and provide feedback on the entire process. The designers should analyze the strengths and weaknesses of the production process, summarize experiences and lessons learned, in order to improve and enhance them in subsequent work. At the same time, the feedback from customers will be organized and submitted to relevant departments, providing a reference basis for subsequent product development and optimization.

#### 3.7.1 Material Selection and Processing Technology

##### 3.7.1.1 Material Selection

The wood material of the hairpin body is different from season to season. In spring, green sandalwood is used, and the slightly green wood material symbolizes the revival of spring for all things. Red sandalwood in summer, the reddish wood material symbolizes the scorching summer sun. Autumn purple cork, the elegant purple symbolizes the deep meaning of autumn, winter purple sandalwood, the deep black purple symbolizes the cold winter of old age.

The material selection of velvet flowers did not choose traditional silk material, but chose the emerging twisting rod. This material is more convenient than traditional silk material, eliminating the steps of cooking, dyeing, boiling, and rolling. In addition, it costs lower compared to silk.

The processing technology of wooden hairpins:

- The first is to determine the size of the pattern and paste it onto the wood.
- The second is to use a curve saw to cut out the contour.
- The third is to use a file to trim the overall appearance.
- The fourth is to depict the hairpin pattern lines.
- The fifth is to carve patterns in three dimensions.
- The sixth is the polishing.
- The seventh is polishing.
- The eighth is applying wood wax oil.

The processing technology of velvet flowers:

- The first is to cut the torsion bar with scissors according to the length used.
- The second is to remove any excess fuzz from the torsion bar.
- The third is to use scissors to tip and trim to the desired shape.
- The fourth is to use eye shadow to dye the desired color on the twister.
- The fifth is that thinner petals and leaves need to be flattened with a straight splint
- The sixth is to use tweezers to adjust the ideal angle of petals and leaves.
- The seventh is to combine the completed parts together, wrap them with QQ thread, and complete with a velvet flower

#### 3.7.2 Difficulties and Solutions in Material Processing

Difficulties in processing wooden hairpin materials: The velvet flowers need to be wrapped and fixed on the hairpin body, but the twenty-four solar terms carved on the wooden hairpin must be exposed.

- Solution: the craftsmen can drill a small hole at the top of the wooden hairpin, fix a thinner piece of wood in the hole, and wrap the velvet around this thinner piece of wood.

Difficulties in processing velvet materials: The color of the twist rod is relatively simple, and silk materials cannot be easily combined to create gradient colors during production.

- Solution: After building the twister, the craftsmen can use a brush to dip in eye shadow and dye the twister with the color you want.

#### 3.7.3 Actual Picture

The following “Figure 9” is actual picture of product design images and wearing pictures.



Figure 9 Product design images and wearing pictures.

#### 4. CONCLUSION

As a material carrier of cultural dissemination, cultural and creative products interact with each other. In the process of designing cultural and creative products, the essence of local and ethnic culture should be extracted from the shape, color, or standard elements. On the one hand, the cultural and creative products are intangible cultural assets, and on the other hand, they are also the development and inheritance of traditional ethnic culture. As consumers of cultural and creative products, this intangible cultural activity has a profound impact on their spiritual level and values, meeting the needs of spiritual and cultural users. Therefore, the author combines the twenty-four solar terms culture with traditional velvet flowers in the design, hoping to continue to inherit the cultural heritage of the twenty-four solar terms and velvet flowers through this method

#### REFERENCES

- [1] Meng Qingbo, Bai Yue, Exploring the Cultural Value of Clothing Style in "Story of Yanxi Palace" [J]. China Newspaper Industry, 2019 (6). (in Chinese)
- [2] Meng Qingbo, Bai Yue, An Analysis of the Innovative Application of Chinese Traditional Culture in Fashion Design [J]. Art and Literature for the Masses, 2019 (2). (in Chinese)
- [3] Pi Yongsheng, Dong Qin, Zhou Zhengfang, Interpretation and Appreciation of Cultural and Creative Products [M]. Southwest Normal University Press, 2014. (in Chinese)
- [4] Dong Jing, Research on the History and Inheritance of Nanjing Velvet Flower [D]. Nanjing: Nanjing University of the Arts, 2008(05). (in Chinese)
- [5] Shen Jing, Research on the Manufacturing Technology of Nanjing Velvet Flower [J]. Art and Literature for the Masses, 2014(03). (in Chinese)
- [6] Jiang Yuanyuan, Yang Xiuyun, Research on the Matching between the Cultural and Creative Industry Policy and the Industrial Life Cycle Evolution in China — Based on Content Analysis Method [J]. Modern Economic Science, 2018, 40(1): 94-105. (in Chinese)
- [7] Jiang Ling, Wang Liling, Agglomeration Benefit Analysis for Cultural and Creative Industry — Taking Beijing as an Example [J]. China Soft Science, 2016(4): 176-183. (in Chinese)
- [8] Wen Shaofeng, Yuan Tingdong, Research on the Inscriptions of Yin Ruins - Science and Technology [M]. Chengdu: Sichuan Social Sciences Publishing House, 1983. (in Chinese)