

วารสารจีนศึกษา มหาวิทยาลัยเกษตรศาสตร์





การสืบสานและพัฒนาสุราเหลืองเมืองไต้โจวมณฑลซานซี¹

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แก้ไขบทความ : 20 กุมภาพันธ์ 2567 ตอบรับบทความ : 1 มีนาคม 2567 รับบทความ : 8 มกราคม 2567

บทคัดย่อ :

การพัฒนาเศรษฐกิจและสังคม ความก้าวหน้าทางวิทยาศาสตร์และเทคโนโลยี ตลอดจนการพบทรัพยากรทางวัฒนธรรม ส่งผลให้นับวันยิ่งมีผู้คนให้ความสำคัญกับการสืบสานและพัฒนามรดกทางวัฒนธรรมที่จับต้องไม่ได้มากขึ้น สุราเหลืองเมืองไต้โจว มณฑลซานซีเป็นองค์ประกอบหนึ่งที่สำคัญในวัฒนธรรมสุราของจีน ปี ค.ศ. 2011 เทคนิคการผลิตสุราเหลืองเมืองได้โจวมณฑล ซานซีได้รับการบรรจุให้อยู่ใน "รายการมรดกทางวัฒนธรรมที่จับต้องไม่ได้" ชุดที่ 3 ของมณฑลซานซี

บทความวิจัยนี้มีวัตถุประสงค์เพื่อเป็นแนวทางในการสืบสานและพัฒนาสุราเหลืองเมืองได้โจวมณฑลซานซี ตลอดจน ส่งเสริมการพัฒนาอย่างยั่งยืนของสุราเหลือง ผ่านมุมมองมรดกทางวัฒนธรรมที่จับต้องไม่ได้ในการศึกษาสุราเหลืองเมืองไต้โจว มณฑลซานซี ใช้วิธีศึกษาเอกสาร การสัมภาษณ์ และแบบสอบถาม เนื้อหาแบ่งเป็นสามส่วน หนึ่งคือภูมิหลังการผลิตสุรา เหลืองเมืองไต้โจวมณฑลซานซี สองคือเทคนิคการผลิต การสืบสาน สภาพการพัฒนาในปัจจุบัน และปัญหาของสุราเหลือง เมืองไต้โจวมณฑลซานซี สามคือเสนอกลยุทธ์ในการสืบสานและพัฒนาสุราเหลืองเมืองไต้โจวมณฑลซานซี

ผลการศึกษาพบว่า ในกระบวนการของสืบสานและพัฒนาสุราเหลืองเมืองไต้โจวมณฑลซานซี มีลักษณะและปัญหา ร่วมกับศิลปหัตถกรรมโบราณอื่นจำนวนมากซึ่งอยู่ภายใต้มุมมองของมรดกทางวัฒนธรรมที่จับต้องไม่ได้ แต่ก็มีลักษณะพิเศษ กล่าวคือ 1. พบผู้สืบทอดเทคนิคการผลิตสุราเหลืองเมืองไต้โจวอยู่ในกลุ่มผู้บริโภคสุราเหลืองเมืองไต้โจวเอง 2. วิธีการสืบสาน สุราเหลืองเมืองใต้โจวพัฒนาเกิดเป็นวิธีการใหม่ 2 วิธีคือ "การสืบสานผสมผสานระหว่างครอบครัวกับสังคม" และ "การสืบสาน โดยใช้เทคนิคภาคใต้วัตถุดิบภาคเหนือ" 3. เทคนิคการผลิต "มรดกทางวัฒนธรรมที่จับต้องไม่ได้" ขนาดกลางและเล็กอย่าง ้สุราเหลืองเมืองไต้โจวนี้ การทำให้เป็นอุตสาหกรรมเป็นตัวเลือกอันดับแรกและเป็นวิธีการที่ดีที่สุดที่จะช่วยให้เทคนิคการผลิต ดั้งเดิมสามารถดำรงอยู่ต่อไปได้

คำสำคัญ: วัฒนธรรมที่จับต้องไม่ได้; สุราเหลืองเมืองไต้โจวมลฑลซานซี; การสืบทอดและวิวัฒนาการ

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¹ บทความนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่อง "The Inheritance and Development of Shanxi Daizhou Yellow Wine" หลักสูตรศิลปศาสตรมหาบัณฑิต สาขาวิชาภาษาตะวันออก คณะมนุษยศาสตร์ มหาวิทยาลัยเกษตรศาสตร์ โดยมี รศ.ดร.กนกพร นุ่มทอง เป็นอาจารย์ที่ปรึกษาหลัก

The Inheritance and Development of Shanxi Daizhou Yellow Millet Wine²

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Received: 8th January 2024

Revised: 20th February 2024

Accepted: 1st March 2024

Abstract:

With socio-economic progress, technological advancements, and the exploration of cultural resources, the inheritance and development of intangible cultural heritage have garnered increasing attention. As a significant component of Chinese liquor culture, Shanxi Daizhou yellow millet wine brewing techniques were included in the third batch of the "Intangible Cultural Heritage List" of Shanxi Province in 2011.

This article aims to provide reference and guidance for the development and inheritance of Shanxi Daizhou yellow millet wine, promoting sustainable development. Within the framework of intangible cultural heritage, the study focuses on Shanxi Daizhou yellow millet wine, employing methods such as literature review, interviews, and questionnaire surveys. The exploration is divided into three main sections: first, the production background of Shanxi Daizhou yellow millet wine; second, the brewing process, inheritance methods, current development status, and challenges of Shanxi Daizhou yellow millet wine; and third, proposing strategies for the inheritance and development of Shanxi Daizhou yellow millet wine.

The research findings reveal that Shanxi Daizhou yellow millet wine, in its process of inheritance and development, shares similarities and challenges with many traditional crafts under the purview of intangible cultural heritage. However, it also possesses its uniqueness. The fundamental discoveries include: 1) Identifying inheritors of the brewing techniques within the consumer community of Daizhou yellow millet wine; 2) Introducing two new modes of inheritance for Daizhou yellow millet wine, namely "alternating inheritance between family and society" and "southern techniques and northern materials inheritance"; 3) For small to medium-scale intangible cultural heritage crafts like Daizhou yellow millet wine, industrialisation emerges as the preferred and optimal means for fostering the inheritance and development of traditional craftsmanship.

Keywords: Intangible Cultural Heritage; Daizhou Yellow Millet Wine; Inheritance and Development

² The article is a part of the M.A. thesis entitled "The Inheritance and Development of Shanxi Daizhou Yellow Millet Wine", Department of Eastern Languages, Faculty of Humanities, Kasetsart University with Assoc. Prof. Dr. Kanokporn Numthong as the main advisor.

山西代州黄酒的传承与发展³

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收稿日期: 2024年1月8日 修回日期: 2024年2月20日 接受日期: 2024年3月1日

摘要:

随着社会经济的发展、科技水平的提高和文化资源的发掘,非物质文化遗产的传承与发展 越来越受到人们的重视。山西代州黄酒作为中国酒文化的重要组成部分,2011 年山西代州黄酒酿 造工艺被收录为山西省第三批"非物质文化遗产名录"。

本文旨在为山西代州黄酒的发展与传承提供参考与借鉴,促进代州黄酒的可持续发展,本文在非遗视域下,以山西代州黄酒为研究对象,运用文献研究法、访谈法和问卷调查法对山西代州黄酒进行了探究,探究内容主要分为三个部分:一是山西代州黄酒的生产背景;二是山西代州黄酒的酿造工艺、传承方式、发展现状及问题;三是提出了山西代州黄酒传承与发展策略。

研究发现,山西代州黄酒在其传承发展过程中,与很多非遗视域下的传统手工艺有着相似的现状和问题,但有其独特性:1)在代州黄酒消费群体中发掘代州黄酒酿造技艺的传承人;2)代州黄酒在传承方式上发展出两种新的传承方式"家庭和社会交替传承"与"南技北料传承";3)像代州黄酒这样的中小规模的"非遗"手工艺,产业化是帮助传统手工艺传承发展的首选和最优方式。

关键词: 非物质文化遗产; 山西代州黄酒; 传承与发展

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³ 本文是泰国农业大学人文学院东方语言系文学说士研究生学位论文《山西代州黄酒的传承与发展》组成部分,主导师是吴琼副教授。

Introduction

Intangible cultural heritage and tangible heritage complement each other and constitute humankind's cultural treasury. In 2003, UNESCO adopted the Convention for the Safeguarding of the Intangible Cultural Heritage, and since then, countries worldwide have been paying more and more attention to intangible cultural heritage; the research and protection towards which have become hot spots.

China is one of the three major ancient countries with a worldwide wine culture. "During the development of wine culture for thousands of years, a wide range of wine varieties have appeared, including the yellow millet wine, a low-ABV fermented wine unique to China and a treasure of the Chinese nation" (Ma & Shan, 2015).

Shanxi (山西) Daixian (代县)⁴ is located in Central China, where the production and development of Daizhou (代州)⁵ yellow millet wine has been said to be done in "South Shaoxing and North Daizhou" since ancient times. This shows that Daizhou yellow millet wine has a long history and an essential position in people's minds. In 2011, the "Daizhou Yellow Millet Wine Production Technique" was officially included in Shanxi province's provincial intangible cultural heritage protection list. However, the author searched CNKI⁶ with "Daixian Yellow Millet Wine" and "Daizhou Yellow Millet Wine" as the subject matter, respectively, and found only 25 results, of which 18 were newspapers, 6 were journals, and one was a master's thesis, this thesis will systematically explore and discuss the inheritance and development of Daizhou yellow millet wine from the perspective of intangible cultural heritage, hoping to make a modest contribution to protecting this valuable wealth left behind by our predecessors.

Literature Review

1. The Inheritance and Protection of Intangible Cultural Heritage

A Review of the Industrialization of Intangible Cultural Heritage for Protection and Inheritance argues that "industrialisation is the preferred way to realise the protection and inheritance of intangible cultural heritage." (Tian, 2015: 164). However, the Industrialization of "Intangible Cultural Heritage": A Controversial Issue argues that "industrialisation of knowledge is one of the available options, but not the whole one." (Liu, 2010: 1). It can be seen that there is controversy among scholars regarding whether industrialisation should be adopted to achieve the inheritance and protection of intangible cultural heritage.

Intangible Heritage suggests that heritage conservation does not rely solely on top-down government intervention or professional action by heritage industry professionals but must also involve local communities and communities of interest (Smith & Akagawa, 2009).

 $^{^{\}mathbf{4}}$ Daixian: It is the Dai county in Shanxi province, China.

⁵ Daizhou: that is, Dai County, called Daizhou in ancient China.

⁶ CNKI: It is the China National Knowledge Infrastructure.

2. The Inheritance and Development of Wine

As for the inheritance and development of wine culture, *History of Wine and Wine Culture, Series 1*, discusses the relationship between grain and wine, western region wine, wine and politics, various national wines, wine tax policies, and wine and health preservation, which proves the critical position of wine culture in Chinese culture (Sun & Li, 2012). *Yellow Millet Wine Cultural Tourism Based on Tourists' Needs--Taking Shaoxing, Zhejiang as an Example* starts from the needs of tourists and studies how to develop Shaoxing yellow millet wine culture by questionnaire and from the consumers' point of view (Zhang, 2020).

As for the inheritance and development of brewing techniques, *The Soul of Chinese Wine--Talking about the Inheritance and Innovative Development of China's Brewing Techniques (1)* ponders the future of the inheritance of China's brewing techniques by taking Chinese white liquor brewing techniques as an example (Wang, 2021). *A Study on the Productive Protection of the Traditional Brewing Technique of* ShuiJingFang (水井坊) *Wine* proposes the problems to be noted and the experiences that can be drawn upon in the process of productive conservation of the traditional brewing techniques of ShuiJingFang (水井坊) wine (Wang, 2014: 3).

As for the development of inheritors, *Inheritance Motivation and Protection Policies for Non-Genetic Inheritors* examines "the current status of research on the protection of non-genetic inheritors, thus proposing the establishment of a non-genetic inheritor protection policy with dual incentives, both spiritual and material." (Huang, 2023: 72). *The Theory of Inheritance and Inheritors* suggests that "there are roughly four ways of inheritance: group inheritance; family (or clan) inheritance; social inheritance; and divinely ordained inheritance." (Liu, 2006: 24).

3. Consumer psychology

The Influence of Consumer Psychology on Purchasing Decisions states, "How to understand and meet consumers' needs? Is to understand the psychological needs of consumers, to achieve the purpose of product sales." (Peng, 2021: 12). *Uncorking the Mystery of Marketing Wine to Generation Y* mentions that consumer psychology focuses on a deep understanding of consumer psychology, which is crucial for wine marketers. (Kennett-Hensel & Allen, 2011)

To summarise, scholars have researched the intangible cultural heritage of wine and its influence on the development of the wine industry from the consumer psychology perspective. However, the author did not find a comprehensive study on Shanxi Daizhou yellow millet wine in the previous studies. Therefore, this thesis attempts to conduct a comprehensive study on the inheritance and development of Shanxi Daizhou yellow millet wine based on the research results of previous researchers.

Research objectives

- 1. To explore the production background of Daizhou yellow millet wine in Shanxi;
- 2. To explore the inheritance of Daizhou yellow millet wine in Shanxi under the perspective of intangible cultural heritage, as well as the development status of Daizhou yellow millet wine and the dilemmas it faces:
 - 3. To explore the development strategy of Shanxi Daizhou yellow millet wine.

Research Methodology

Literature research method: Collect and organise relevant literature through Daizhou records and China Knowledge Network (CNKI), sort out the historical development of Daizhou yellow millet wine brewing technology, and excavate the cultural connotation of Daizhou yellow millet wine.

Interview method: Interviews were conducted with operators, inheritors, government non-legacy staff, etc. The interviews aimed to understand the current situation and problems with developing Daizhou yellow millet wine.

Questionnaire Survey Method: The issuance of 210 questionnaires to empirically analyse consumers' consumption situation and willingness to use Daizhou yellow millet wine to better help Daizhou yellow millet wine out of the development dilemma.

Results and discussion

- 1. Background of Daizhou Yellow Millet Wine Production in Shanxi Province
- 1.1 Physical geographic environment of Daixian

Daixian is located at longitude 112°43′-113°21′E and latitude 38°49′-39°21′N, in the northeast of Shanxi. Daixian has a temperate continental semi-arid climate with plenty of sunshine. Hutuo (滹沱) River, the largest river in Daixian, crosses the whole territory from northeast to southwest, with a total length of 60 kilometres, a total area of 1,721.5 square kilometres, and a total of 1.2 billion cubic meters of groundwater, which provide a unique and high-quality water source for the brewing of yellow millet wine in Daixian.

1.2 Cultivation of glutinous millet in Daixian

Glutinous millet, one of China's ancient grains, has particles larger than millet, is golden yellow, and viscosity; it is an excellent raw material for winemaking. Daixian geographic advantages are significant to the production of glutinous millet. Yanmen (雁门) Mountain blocking sand and cold flow, Hutuo (滹沱) River creating a fertile land full of sunlight, the big temperature difference between day and night, become the primary origin of glutinous millet. Cultivated here, the quality of glutinous millet is exceptionally high,

rich in carbohydrates, amino acids, protein, sugar, and various vitamins. In north China, glutinous millet is considered more valuable than millet and is especially valuable in yellow millet wine production.

1.3 Historical Origins of Daizhou Yellow Millet Wine

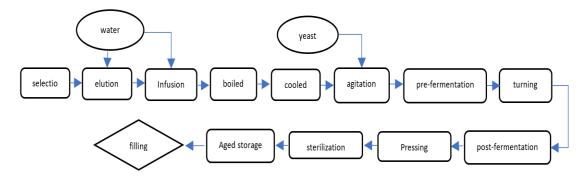
Daizhou has a long history of brewing wine, which was first recorded in the Song and Jin dynasties, "The Song Dynasty's Zhang Nengchen (张能臣)'s 'Liquor Records' contains 'Yanmen Jinbo and Qiongsu (雁门金波⁷又琼酥⁸)'" (Daixian Local History Compilation Committee, 1988: 121). After the Ming Dynasty, guilds were formed, and the 'Wine Immortal Temple' was built to pray for the prosperity of the brewing industry. In the Qing Dynasty, the brewing industry in Dai Zhou became more prosperous and continued until the Republic of China. "In 1981, Daizhou Winery was established, and in 1984, Daizhou yellow millet wine was praised as 'bright colour, mellow taste, in harmony with sweet and sour' at the National Northern Qingdao Yellow Millet Wine Criticism Council, which was highly evaluated. Daizhou yellow millet wine was selling well in the North China market around the 90's, and it was a fashion to drink Daizhou yellow millet wine. " (Daixian Local History Compilation Committee, 1988: 122). In 2011, Daizhou yellow millet wine brewing technology was successfully selected as one of the intangible cultural heritages of Shanxi province.

2. The Inheritance and Development of Daizhou yellow millet wine

2.1 Intangible Cultural Heritage and the Brewing Techniques of Daizhou Yellow Millet Wine

The author produced a flow chart of the Daizhou yellow millet wine brewing process based on her investigation, as follows:

Figure 1 (source: author-generated)



⁷ Jinbo: It is named after the spring water of Jinbo. It is located are in Daixian.

⁸ Qiongsu: It is named after the jade liquid used to make it, and the jade liquid spring is commonly known as the Sweet Water Well. It is located are in Daixian.

2.2 Intangible Cultural Heritage and the Way of Passing on Daizhou Yellow Millet Wine

(1) Family inheritance:

Family inheritance, the individual inheritance of intangible cultural heritage, is based on the close relationship and trust mechanism between generations. The brewing techniques in Dongliushu (东留属) Village have always been inherited within the family, and the genealogy of its inheritance is as follows:

Table 1 (source: author-generated)

Generation	Name	Gender	Date of Birth	Cultural Level	Mode of Inheritance
1	Gao Tingzhi (高廷枝)	Male	unknown	Unknown	Within the family
2	Gao Maoren (高毛仁)	Male	unknown	Unknown	Within the family
3	Gao Guixi (高贵喜)	Male	1933	None	Within the family
4	Gao Xiulin (高秀林)	Male	1959	Elementary school	Within the family
5	Gao Guojun (高国军)	Male	1986	Bachelor's degree	Within the family

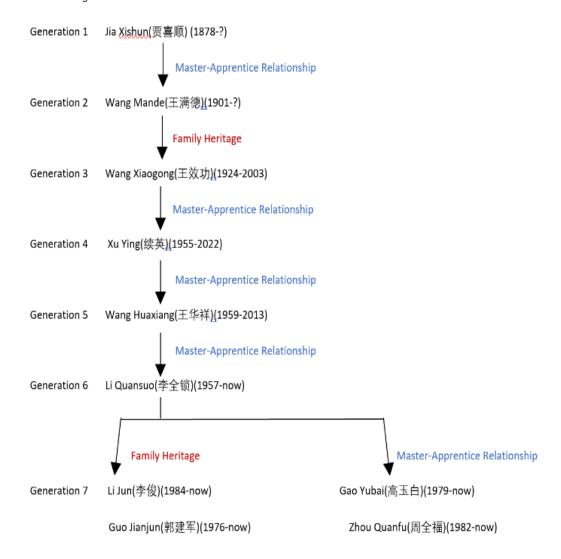
(2) Social inheritance:

Social inheritance, which is not limited to blood and race relations, is a shared responsibility of all humanity. "On April 24, 2023, Li Quansuo (李全锁), the provincial representative inheritor of Shanxi Daizhou yellow millet wine brewing technology, formally accepted Gao Yubai (高玉白) (person in charge of Daixian Daixian Liquor Co., Ltd.) and Zhou Quanfu (周全福) (person in charge of Daixian Yanmen (雁门) Qiongsu (琼酥) Liquor Co., Ltd.) as his disciples to learn yellow millet wine brewing. " (Liu, 2023). The two people above have no blood relationship with Li Quansuo (李全锁); hence, this shows the social level to spread the yellow millet wine brewing techniques in the way of inheritance.

(3) The alternating inheritance between family and society:

The alternating inheritance of family and society is the intersection of family inheritance with blood relations and social inheritance, which is not limited to blood relations. A typical representative is the division relationship of the yellow millet wine brewer of Sida (四达) Wine Co. Ltd. The inheritance of this branch of Sida Enterprise started with Jia Xishun (贾喜顺). Then, the inheritance alternated between family and social inheritance, with social inheritance being the main one, as shown in Figure 2.

Figure 2 (source: author-generated)



(4) Inheritance of "Southern Techniques and Northern Materials":

Southern Technology and Northern Material refer to the use of southern Shaoxing brewing technicians to help brew raw materials for corn Daizhou yellow millet wine. This new inheritance is a new investment in the Yanmen King (雁门王). Liquor will be used in the way. Li Quansuo (李全锁) very much recognises this new inheritance development. He believes the Yanmen King wine industry will bring huge capital investment, drive the development of yellow millet wine enterprises in Daixian, and bring the southern brewing of advanced machines and advanced technology. This is not to abandon the traditional brewing of yellow millet wine but to learn and let the ancient Daizhou yellow millet wine continue to inherit development!

Compared with the inheritance methods researched by the previous researchers, the author has compiled two new inheritance methods: "The alternating inheritance between family and society" and "Southern Techniques and Northern Materials".

3. The Reality of the Inheritance and Development of Daizhou Yellow Millet Wine

(1) Government:

According to the information published on the official website of the Daixian government (http://daixian.gov.cn/), the author has compiled the government's efforts to help the development of DaiZhou yellow wine from 2010 to the present day.

The Daizhou yellow millet wine brewing technique was recognised as a Shanxi provincial intangible cultural heritage project by the Intangible Cultural Heritage Division of the Shanxi Provincial Department of Culture and Tourism in 2011, as shown in the table below:

Table 2 (source: author-generated)

Project Category	Project Name	Project Number	Declaring Area (Unit)	Batch	Approval Year
Traditional	Daizhou yellow millet wine	VIII-35	Daixian Sida Alcoholic	Third	2011
techniques	brewing techniques		Beverages Limited	batch	
			Liability Company		

In 2018, the introduction of Jinzhen (晋臻) Yellow Millet Wine Sun Baoguo (孙宝国) academician workstation committed to the development of new standards for yellow millet wine in Daixian. In 2021, it was announced that the group standard T/DHJ001 (Daizhou yellow millet wine superior) introduction of the group standard marks the quality of Daizhou yellow millet wine to a higher level.

In 2020, the Daizhou Yellow Millet Wine Association was set up. The Daizhou Government organised Daizhou Yellow Millet Wine Enterprises to participate in the 20th China - ASEAN Expo, Sichuan (四川) International Wine and Liquor Expo and other significant events, with subsidies for publicity fees, etc., the Development Forum of Daizhou yellow millet wine and the first Daizhou yellow millet wine Cultural Festival were held; and the second Daizhou yellow millet wine Cultural Festival was held in 2023.

The traditional brewing technique of Daizhou yellow millet wine has formed a complete inheritance genealogy (see Table 1 and Figure 2), and Li Quansuo (李全锁) and Gao Xiulin (高秀林) became the representative inheritors of the intangible cultural heritage program of Shanxi Province in 2011 and 2023, respectively. At the same time, the social security and humanistic care for the inheritors are more comprehensive. The representative inheritors of provincial intangible cultural heritage enjoy an annual subsidy of 3,000 yuan, and symposiums are organised for the inheritors to share their experiences.

⁹ Group standard: its quality standard is 2-2.5 times of the national standard, group standard > enterprise standard > national standard.

(2) Society:

Through pictures, texts, and videos, the media conveyed the brewing process and culture of Daizhou yellow millet wine to the public through audiovisual sensations, which made the audience feel the charm of the non-heritage program more affectionately and directly and triggered people's desire to understand and taste it. As shown in Table 4 of this paper, network publicity has played a positive role and is the most effective way for people to understand Daizhou yellow millet wine.

(3) Business:

Firstly, "there are seven representative yellow wine enterprises built in Daixian" (Ren, 2023), of which two enterprises, Yanmenzhou (雁门州) and Sida (四达), have used historical sites or cultural symbols in Daixian as the name of the enterprise (e.g., Yanmenzhou (雁门州)) or the type of wine (e.g., Yanmen (雁门)) Jinbo (金波) Wine), and are actively creating a cultural brand with regional characteristics. Secondly, the wine enterprises are committed to innovation and research and development, such as the Sida (四达) company with the Shanxi (山西) Academy of Agricultural Sciences to develop quinoa yellow millet wine and Shanxi (山西), Agricultural University to develop buckwheat yellow millet wine. Finally, Sida (四达) completed the construction of the Daizhou Yellow Millet Wine Museum this year, which attracted the attention of experts, peers, media, and wine-tasting enthusiasts.

(4) Consumer questionnaire analysis

To better understand consumers' consumption of Daizhou yellow millet wine and their willingness to do so, the author randomly selected the survey respondents using the Questionnaire Star¹⁰ online research platform on October 20-24. A total of 210 questionnaires were issued, 206 were recovered, and the data were processed using SPSSAU¹¹, which "Chen Guoyu(陈国玉) confirmed has significant advantages over traditional SPSS software or other individual analysis software." (Chen, 2022: 77).

Table 3 Demographic variable analysis

Demographic variables	Detail	Frequency	Percentage (%)
Cov	Female	113	54.85
Sex	Male	93	45.15

¹⁰ Questionnaire Star: It is a professional online questionnaire, exam, assessment, and polling platform.

¹¹ SPSSAU: Online statistical analysis software.

Demographic variables	Detail	Frequency	Percentage (%)
	Below 30 years	39	18.93
	30-40 years	114	55.34
Age	40-50 years	25	12.14
	50-60 years	15	7.28
	Above 60 years	13	6.31
	Junior high school or below	10	4.85
Educational attainment	Secondary or high school	37	17.96
Educational attainment	Bachelor's or college	136	66.02
	Masters and above	23	11.17
	Civil Servants/Employees of Institutions	28	13.59
	Corporate Staff	55	26.70
	Professional and technical staff	33	16.02
	Labourers	22	10.68
Occupation	Farmers	9	4.37
	Military personnel	7	3.40
	Individuals with experience	16	7.77
	Students	17	8.25
	Retired	19	9.22
	Less than 2000 RMB	25	12.14
	2000-3000 RMB	39	18.93
lo co po o (po o p.t.)	3000-4000 RMB	31	15.05
Income/month	4000-5000 RMB	32	15.53
	5000-6000 RMB	26	12.62
	6000 RMB and above	53	25.73

Table 3 shows the demographic variables of the respondents, most female (54.85%), and the average age was 30-40 years. Income was over 6,000 RMB or more monthly (25.73%). However, they are more educated, with 66.02% having a college or bachelor's degree, of which 11.17% have a master's degree or higher. Business employees accounted for 26.17%. Table 4 shows that most people interested in Daizhou yellow millet wine are 30-40 years old and have a particular economic and social foundation.

Table 4 Cross-tabulation analysis between age and willingness to taste Daizhou yellow millet wine:

T11.	N	Willingness to taste Dai:		
Title	Name	Yes	No	Total
Age	Below 30 years old	33	6	39
	30-40 years old	87	27	114
	40-50 years old	20	5	25
	50-60 years old	13	2	15
	Above 60 years old	12	1	13
	Total	165	41	206

Figure 3 Analysis of whether respondents are interested in Daizhou yellow millet wine

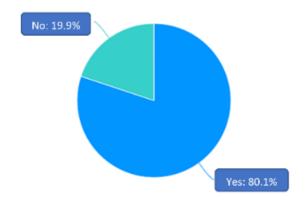
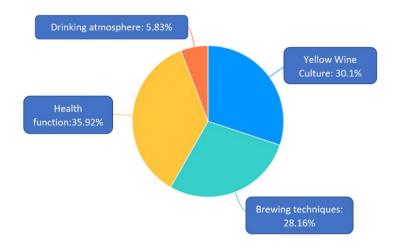


Figure 4 Respondents are most interested in yellow millet wine.



Regarding interest in Daizhou yellow millet wine, 80.10% of the respondents it was indicated that they liked it (see Figure 3). Interest generates demand. Therefore, four options were set for those most interested in yellow millet wine: "yellow millet wine culture, brewing techniques, health care function, and drinking atmosphere" (see Figure 4). Among them, 35.92% of the respondents indicated that they were most interested in the health function of yellow millet wine, followed by 30.10% in yellow millet wine culture and 28.16% in the winemaking process.

Table 5 Statistical analysis for understanding the channels of Daizhou yellow millet wine

Name	Options	Frequency	Percentage (%)
	TV	9	9.22
	Internet	60	29.13
	Newspapers and magazines	23	11.17
How did you learn about	Friends	41	19.90
Daizhou yellow millet wine?	WeChat	23	11.17
	Offline wine tasting	19	9.22
	Others	21	10.19
	Total	206	100.0

Figuring out how consumers understand yellow millet wine can help promote the development of Daizhou yellow millet wine in a targeted way. The authors set up seven multiple-choice options, and the respondents chose according to their situation. According to the analysis results (see Table 6), 29.13% of the respondents learned about it through the network, and 19.90% learned about it by communicating with their friends and disseminating yellow millet wine. It is more important to focus on the network publicity and word-of-mouth publicity of Daizhou yellow millet wine.

Table 6 Interest in the kind of inheritance and development methods of Daizhou yellow millet wine

Name	Options	Frequency	Percentage (%)
	Participation in		
Marine I Color	the Daizhou Yellow Millet Wine 58		28.16
What kind of inheritance and	Cultural Festival		
development are you interested in?	To see a live demonstration of	80	38.83
	yellow millet wine brewing	00	36.63



Name	Options	Frequency	Percentage (%)
	Yellow Millet Wine Health Club	39	18.93
	Customised yellow millet wine	10	4.85
	Others	19	9.22
Total		206	100.0

Table 6 shows that 28.16% expected to attend the Daizhou Yellow Millet Wine Cultural Festival by watching the physical demonstration of the Daizhou yellow millet wine production process at the site. In addition, because of the health-improving function of yellow millet wine, 39% hoped there would be yellow millet wine health clubs.

The above analysis shows that those interested in Daizhou yellow millet wine are mainly middle-aged. Their consumption motives are closely related to their interest in yellow millet wine, and they are most expected to participate in watching the demonstration of Daizhou yellow millet wine brewing techniques and experience its unique charm. In terms of the functions of yellow millet wine, they are particularly concerned about the health care function of Daizhou yellow millet wine. Dissemination methods are mainly through the Internet and sharing with friends.

Therefore, in promoting the inheritance and development of Daizhou yellow millet wine, firstly, we should accurately locate the target audience and increase the publicity to those interested in Daizhou yellow millet wine. Secondly, we should design relevant activities according to the cultural background of Daizhou yellow millet wine to let the consumers understand the production process. Furthermore, we should combine the healthcare function of Daizhou yellow millet wine and promote a healthy drinking lifestyle. In addition, we can hold the Daizhou yellow millet wine cultural celebration and publicise it through tourism festivals. Lastly, we should combine wine culture tourism with other tourism resources and launch a particular tourism line.

With the continuous expansion of China's e-commerce service market, online sales have become the main channel for the current sale of items, and various shopping apps and online platforms do not have identical product advantages and service characteristics. Although this research is open to all people in all parts of the country, the questionnaire is based on the WeChat circle of friends and other means of distribution, so the research group is mainly associated with the release team of the crowd. Most of them are young people between the ages of 30 and 40, which accounted for more than 55% of the number of people in the research. Therefore, there are limitations in the scope of this research. However, the research results are informative as the current online purchasing of items is mainly among young and middle-aged people.



4. Problems in the process of inheritance and development of Daizhou yellow millet wine

(1) The status of inheritance is not optimistic:

Firstly, the ageing of the inheritors is serious. As of December 2023, all of the provincial non-heritage inheritors of the Daizhou yellow millet wine brewing technique were older people from the 1950s, with an average age of 65 years old, and the provincial inheritors are ageing seriously, so the inheritors do not have enough energy to accept and teach apprentices and carry out inheritance activities, which seriously affects the sustainable development of the Daizhou yellow millet wine non-heritage brewing technique.

Secondly, there is insufficient protection and cultivation of inheritors. For example, Article 31 of the *Intangible Cultural Heritage Law* sets out several detailed obligations for the inheritors, which they must strictly enforce, or they will be disqualified as inheritors. However, the relevant aspects of the inheritor's power are seldom involved. It is only proposed to provide economic subsidies to the inheritor. The lack of clarity in the provisions of the law seriously affects the development of the inheritor's inheritance work.

Thirdly, the construction of the inheritance talent team is insufficient. To begin with, the regional attraction is insufficient due to the remote location and small overall economy of Daixian. Moreover, there is a lack of interdisciplinary talents, mainly focusing on technology or marketing and other single-discipline specialities, with uneven distribution of talents within the enterprise, more focused on technology and marketing, and the lack of cultural cultivation. Finally, the overall quality and professional level need to be improved to build a high-quality, specialised talent team.

(2) Lack of standardisation and harmonisation in the management of government enterprises

First, the trademark standard is not uniform. The Daizhou yellow millet wine recipe is labelled confusingly, with glutinous millet and yellow rice in the ingredients. Distributor Guo Jianjun (郭建军) explained that this confusion stems from inconsistent standards and insufficient regulation of yellow millet wine producers. In the early days of Daizhou, yellow millet wine was mainly sold in Shanxi, where the locals called yellow rice and did not use the glutinous millet. As Daizhou yellow millet wine gained national popularity and sales expansion, outsiders considered yellow rice to be millet. Since manufacturers have not standardised their products, this difference has caused problems for consumers. Customers who do not understand yellow rice and glutinous millet may mistakenly believe they are two completely different ingredients.

Second, the concept of "blending" has had a negative impact. It is an indispensable process for yellow millet wine to blend different base wines to achieve a variety of flavours using the technique of blending original syrups. However, as the public generally associates "blending" with fake wine, there are two reasons behind this phenomenon: firstly, the vast fake wine case in Wenshui (文水) County, Shanxi Province, in 1998, which resulted in 27 deaths, aroused the public's negative perception of "blending";



secondly, in 1999, national media reported that "70% of the liquor in China is blended", which deepened the public's negative impression of "blending". This perception has put yellow millet wine manufacturers in a conflicting position, as they are hesitant to label their wines as "blended" due to public perception, even though they believe it is necessary to label their wines as "blended".

Thirdly, the distribution channels were disorganised. There were several problems at the beginning of the commercial development of Daizhou yellow millet wine. First, the placement of yellow millet wine in supermarkets was chaotic, and operators did not know enough about Daizhou yellow millet wine. This led consumers to mistakenly believe that yellow millet wine was mainly used for cooking wine rather than as a kind of alcohol that could be consumed directly. Secondly, Daizhou yellow millet wine was regarded as low-priced and poor in taste in the minds of consumers. This impression came from the low-priced fake yellow millet wines that appeared in the market in the 1990s, which caused consumers to doubt the quality of yellow millet wines in general and formed the inertia of consumption in the market.

(3) Dissemination of information still needs to be strengthened

First, the dissemination and publicity process focuses on product marketing and is light on cultural inheritance. Recently, it has relied on the Internet to establish various publicity channels. As shown in Table 5, most consumers recognise Daizhou yellow millet wine through the Internet. However, the publicity content is mainly focused on product marketing, and there is not much publicity and promotion of the traditional skills themselves and the yellow millet wine culture.

Secondly, there is a lack of regularity in communication and publicity. On the one hand, offline promotional activities are unevenly distributed, focusing mainly on essential festivals. At the same time, there are fewer activities in other periods, which does not meet the psychological needs of most consumers to watch the brewing techniques on site. On the other hand, the online platform is underutilised. The author did not find a webpage on Daizhou yellow millet wine brewing techniques, and although various wine enterprises have set up public numbers on WeChat, the monotonous form of resource presentation, slow updates, and insufficient daily maintenance have resulted in the public number platform being almost stagnant and underutilised.

(4) Inadequate planning for commercial development of NRM

The business planning mode of Daizhou yellow millet wine is single, and the cultural connotation is not deep enough. In recent years, national wine culture tourism has been rapidly emerging and gradually recognised by the community. Daizhou Yellow Millet Wine's leading enterprise created a cultural museum and study base. However, there is a specific role because the scattered layout did not form clusters and failed to give tourists an overall feeling. In addition, wine culture tourism's lack of unique characteristics,

like other museums, lack of depth interaction, and not fully showing the effect of intangible cultural heritage affects the inheritance and development of Daizhou yellow millet wine.

- 5. Inheritance and Development Strategies of Daizhou Yellow Millet Wine in Shanxi Province
- 5.1 Improve the system of training and protection of inheritors
- (1) Based on schools, cultivate the new generation of inheritors.

Primary and secondary school students can be listed as potential inheritors of intangible heritage, and their interest in intangible culture can be cultivated. *The Introduction to Intangible Cultural Heritage* mentions that "intangible culture has an important educational value" (Wang, 2008: 94). The process of brewing Daizhou yellow millet wine can be combined with the subject of physics (chemistry). The primary process of brewing can be presented to the students, such as the physics (chemistry/process) of evaporation and heat absorption that occurs during the boiling of millet, which not only allows children to master the knowledge but also improves the understanding of the brewing process of Daizhou yellow millet wine.

(2) Material and spiritual protection should be given to inheritors.

Materially, the inheritors should be given the corresponding economic benefits and a "welfare allowance" according to the size of their contribution. Spiritually, the inheritors should be given basic respect and corresponding special status, in addition to recognising the results of their efforts. We can learn from ShuiJingFang (水井坊) wine the inheritance of the protection mode. ShuiJingFang (水井坊) wine not only established a complete inheritance of the directory but specifically will inheritance of information and skills have woven into a book, into the book *Sichuan (四川) Province Intangible Cultural Heritage Dictionary*. These initiatives ensure the completeness of the historical materials of non-genetic inheritance and fully manifest the value of the inheritors.

(3) Improve the training mechanism for inheritors.

The first is a talent attraction strategy, establishing a professional talent recruitment plan, including online recruitment and cooperation with professional wine associations. It establishes a training program to ensure newly imported talents adapt to traditional brewing techniques and provides competitive salaries and benefits. The next step is to cultivate composite talents and set up a comprehensive training program to equip heritage talents with a comprehensive knowledge structure, including technology, marketing and understanding of traditional culture. Lastly, there is a need for internal and external balance and diversity enhancement, establishing a rotation mechanism to promote experience sharing and increasing specialised training in intangible cultural heritage protection.

5.2 Strengthening the promotion and publicity of Daizhou yellow millet wine culture

- (1) According to the survey data, the Internet is the most essential way for people to understand Daizhou yellow millet wine, and the publicity of emerging media should be strengthened by using the official website of the enterprise, the website of the Intangible Cultural Heritage Center and the governmental website to carry out extensive Internet publicity. It can use apps, public numbers and other new media to enhance the public's brand and cultural cognition of Daizhou yellow millet wine.
- (2) To strengthen the regularity of publicity, make full use of and maintain the existing communication platform of Daizhou yellow millet wine, regularly update the content of the platform as well as the news push so that the audience can form a sense of responsibility for the protection and inheritance of traditional skills.
- (3) The publicity of cultural content should be enhanced. The output of cultural content should be strengthened on the publicity platform to tell the story of Daizhou yellow millet wine. As shown in Figure 4, people are most interested in the healthcare function of Daizhou yellow millet wine. Based on the psychology of consumers, we should target the cultural output, integrate the culture of Daizhou yellow millet wine into the concept of health, and design activities with the theme of "culture + health". For example, through winery tours, highlighting the health function of Daizhou yellow millet wine in cultural exhibitions or emphasising the relevance of traditional brewing techniques to a healthy lifestyle.

5.3 Government Enterprises Regulate Industry Behavior

(1) Optimization of trademark standard consistency.

First, relevant government departments should strengthen the supervision of yellow millet wine production standards to ensure that manufacturers follow consistent trademark standards. Secondly, a unified trademark naming standard should be formulated and implemented to clarify the conditions and meanings of using "yellow rice" and "glutinous millet" logos to reduce consumers' confusion. In addition, consideration can be given to strengthening the role of industry associations to urge enterprises to consciously comply with the standards and improve the standardisation of the industry as a whole. Establishing consistent trademark standards will help enhance the image of Daizhou yellow millet wine in the market and increase consumer trust in the product.

(2) Repositioning the positive perception of the concept of "blending".

First, manufacturers can explain to consumers the positive effects of blending in the production of yellow millet wine openly and transparently, emphasising that it is a technical brewing process that helps to adjust the taste and style of the wine rather than a simple act of adulteration. Secondly, it is suggested that the government should guide the media to strengthen the popularisation of science and introduce

the yellow millet wine blending process in depth to eliminate the public's misunderstanding of the negative perception of "blending". By positively guiding the public's perception, "blending" can reduce consumers' doubts and regain trust in the yellow millet wine market.

(3) Optimize sales channels and enhance product recognition.

First, it is recommended that Daizhou yellow millet wine enterprises cooperate in depth with supermarkets and retailers, develop clear display standards, and reasonably categorise Daizhou yellow millet wine in supermarkets, highlighting its drinking characteristics and its difference from cooking yellow millet wine. Secondly, strengthen the marketing of the Daizhou yellow millet wine brand to increase product awareness. This can be done by organising tasting events and participating in industry exhibitions to convey the product's unique selling points to consumers and highlight its quality and cultural characteristics. Meanwhile, cooperation with the catering industry should be strengthened to promote the consumption of Daizhou yellow millet wine on the dining table and cultivate positive consumer perceptions of yellow millet wine.

5.4 Development of Wine + Cultural tourism approach

(1) Developing the characteristics of wine-cultural tourism.

Wine-cultural tourism can attract audiences with the unique cultural heritage of wine as the background and play the double effect of cultural output and product marketing. As a provincial intangible cultural heritage, the traditional brewing technique of Daizhou yellow millet wine has a high historical and cultural value. It is integrated with the culture of the whole Daixian, which can be utilised as a development advantage. Daizhou yellow millet wine can be combined with the Yanmen Pass¹² (雁门美) architectural complex and the spirit of Yanmen Pass to create a series of activities such as the Yang family generals¹³ guarding the pass against the enemy, drinking a strong wine cultural atmosphere, and worshipping the Temple of the Wine Immortal, etc. to give play to the characteristics of its own wine culture and attract more groups of people to visit the experience of recreation.

(2) Highlight the consumer experience of wine culture tourism.

According to the survey data in Figure 5, consumers have a psychological demand to experience the brewing process. Therefore, the way to develop wine culture tourism to enhance tourists' experience of Daizhou yellow millet wine can be based on the restoration and reconstruction of the traditional wine

¹² Yanmen Pass: It is a historic mountain pass in China, served as a strategic gateway and military stronghold throughout ancient times.

The Yanmen Pass spirit embodies unwavering resilience and determination in adversity.

¹³ Yang Family Generals: They are famed in Chinese history, were distinguished military leaders celebrated for their valor and strategic prowess.



buildings, wine vessels, wine tools and other cultural hardware facilities through the traditional wine customs and wine rituals, and participate in some of the steps of the brewing of yellow millet wine, so that the tourists can fully experience the unique value of the Daizhou yellow millet wine culture and brewing techniques. In addition to this, bold innovation should be combined with the times, and regular or long-term organisation should be held to develop personalised activities such as DIY brewing, ancient wine sealing, offline wine tasting, etc., to increase tourists' knowledge of wine and promote the output of wine culture.

Conclusions

This paper summarises the production background, enterprise development, brewing process, and inheritance of Daizhou yellow millet wine, discusses the consumer questionnaire, discusses the current situation of Daizhou yellow millet wine, and proposes a solution strategy. The author summarises three ways that are different from the previous ones, from inheritance and development strategy.

- 1. Inheritors and inheritance methods. In organising the previous research literature, the author found that the main body of inheritance mainly includes government-led, scholars' research, joint colleges and universities and media publicity. However, the inheritance population is still in short supply. Through the discussion of Daizhou yellow millet wine and inheritance content, especially the analysis of consumer questionnaires, the author believes that non-genetic inheritors can be tapped from consumers because consumers have a wide range. In addition, consumers are not only purchasers but also spread Daizhou yellow millet wine and Daizhou yellow millet wine culture by watching, experiencing and learning Daizhou yellow millet wine brewing techniques, a new way of non-genetic inheritance.
- 2. Liu Xicheng proposed that "there are four ways of inheritance: group inheritance, family (or clan) inheritance, social inheritance, and divine inheritance" (Liu, 2006: 24), which is a common way of non-genetic inheritance. After combing the inheritance methods of Daizhou yellow millet wine, the author has organised new inheritance methods of the intangible cultural heritage: "The alternating inheritance between family and society" and "Southern technique and northern material inheritance". The emergence of new ways of inheritance shows that people pay attention to and recognise the yellow millet wine brewing skills of Daizhou. The author believes that with the increase of non-heritage fever, there will be new ways of inheritance.
- 3. Tian Li believes that "the industrialisation of intangible cultural heritage is the preferred way to realise the protection and inheritance of intangible cultural heritage." (Tian, 2015: 164), and Liu Xicheng believe that "industrialisation of knowledge is one of the options, but not all." There is controversy among scholars regarding whether industrialisation should be adopted to achieve inheritance and protection of intangible cultural heritage.

The author believes that inheritance and development complement each other, whether the industrialisation of non-heritage needs specific analysis of specific issues. Shaoxing yellow millet wine and Daizhou yellow millet wine, for example, although they are both "non-heritage" projects, Shaoxing yellow millet wine has established a perfect production chain, a large consumer base and national popularity, showing that its industrialisation has been a sound form of research should pay more attention to the heritage. On the contrary, the consumer group of Daizhou yellow millet wine is mainly confined to Shanxi, the economic situation of the enterprise is poor, and the scale of the industry is small; for such small and medium-sized enterprises, industrialisation is a difficult task, but it is also the preferred and optimal way of inheritance development.

The author also believes that despite the long history of Daizhou yellow millet wine, local people's habit of drinking yellow millet wine is gradually changing due to the competition from white wine and grape products. The industrialisation of yellow millet wine enterprises can improve economic and social benefits, bring Daizhou yellow millet wine back into people's lives, help protect this kind of non-heritage handicraft that may disappear, and realise its inheritance and development.

Recommendations

- 1. It is suggested that future researchers should explore the value of yellow millet wine culture and brewing technology as the inheritor of brewing technology;
- 2. In the process of inheritance and protection of the intangible cultural heritage of traditional handicrafts, it is necessary to choose locally adapted, purposeful and comprehensive industrialisation measures according to a series of comprehensive conditions such as local cultural environment, cultural characteristics and economic environment with strong support from the government;
- 3. Studying Daizhou yellow millet wine from the industrialisation perspective is possible. Finally, from the questionnaire made by the author, it is known that consumer demand has an essential influence on the development strategy of the yellow millet wine industry, so it is worthwhile to investigate the influence of consumers on the development of yellow millet wine in Daizhou from a psychological point of view.

Reference

Chen, G. Y. (2022). Influencing factors and guiding strategies of college students' learning engagement – Wisdom analysis based on online SPSSAU system. *Education Research Monthly (3)*, 73–79. https://doi/10.16477/j.cnki.issn1674-2311.2022.03.006

Daixian Local History Compilation Committee. (1988). Daixian Records. Bibliographic Literature Publishing.

- Huang, Y. L. (2023). Inheritance Motivation and Protection Policies for Non-Genetic Inheritors. *Journal of Guizhou Normal University (Social Science Edition) (3)*, 72-80. https://doi.org/10.16614/j.gznuj.skb.2023.03.007
- Kennett-Hensel, P. A., & Allen, C. R. (2011). Uncorking the Mystery of Marketing Wine to Generation Y:

 Lessons from Consumer Psychology. *Marketing Management Journal, 21(2),* 54-69.

 https://www.mmaglobal.org/publications/MMJ/MMJ-Issues/2011-Fall/MMJ-2011-Fall-Vol21-Issue2-KennettHensel-Neeley-Min-pp54-69.pdf
- Liu, X. C. (2006). On the Inheritance and Inheritors. *Journal of Henan Institute of Education (Philosophy and Social Science Edition) (05),* 24-36. https://doi.org/10.3969/j.issn.1006-2920.2006.05.003
- Liu, X. C. (2010). Industrialisation of "Intangible Cultural Heritage": A Controversial Issue. *Journal of Henan Institute of Education (Philosophy and Social Science Edition) (04)*, 1-7.

 CNKI:SUN:HZJX.0.2010-04-003
- Liu, R. (2023, April 24). Provincial Intangible Cultural Heritage Representative Inheritor Li Quansuo accepts apprentices to pass on his skills. Daixian Media Center. https://www.daixianxinwen.com/newsdetails.html?index=null&id=10799
- Ma, L. N., & Shan, M. L. (2022). From the revival of yellow wine perspective of China's "non-heritage" products market countermeasures. *Commodity Economy (6)*, 82-85. https://doi/10.19995/j.cnki.CN10-1617/F7.2022.06.082.
- Peng, Z. (2021). The Influence of Consumer Psychology on Purchasing Decisions. *China Market (6)*, 2. https://doi.org/10.13939/j.cnki.zgsc.2020.33.129
- Ren, F. C. (2023, September 27). 2023 Daizhou Yellow Millet Wine Cultural Festival opens. Xinzhou Online. http://www.xzrbw.cn/info/1215/346872.htm
- Smith, L., & Akagawa, N. (2009). Intangible Heritage. Critical Issues In Cultural Heritage. Routledge.
- Sun, J. Z., & Ma, L. Q. (2012). *History of Wine and Wine Culture, No. 1 Series*. Social Sciences Literature Publishing House.
- Tian, L. (2015). An Overview of the Industrialized Protection and Inheritance of Intangible Cultural Heritage. *Journal of Harbin Institute of Vocational Technology (2)*, 164-165. https://doi.org/10.3969/j.issn.1008-8970.2015.02.080
- Wang, Y. G. (2022). The Soul of Chinese Wine--Talking about the Inheritance and Innovative Development of China's Brewing Techniques (1). *Winemaking (01)*, 2-4+11.
- Wang, J. J. (2014). A Study on the Productive Protection of the Traditional Brewing Technique of Shui Jing Fang Wine (Master's Thesis). Sichuan Academy of Social Sciences.
- Zhang, M. (2020). Yellow Millet Wine Cultural Tourism Based on Tourists' Needs--Taking Shaoxing,

 Zhejiang as an Example. *Journal of Shaoxing College of Arts and Sciences (Humanities and Social Sciences)* (01). 67-71+120. https://doi.org/10.16169/j.issn.1008-293x.s.2020.01.012