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Problems of Lagging Brand Building of Agricultural Products Affecting Market Competitiveness and Countermeasures of Traceability System

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Abstract: The current construction of agricultural product brands faces core problems such as product homogenization, insufficient quality and safety assurance, limited brand communication channels, and weak premium ability. The root cause lies in the interweaving of multiple factors such as limited capacity of agricultural production entities, lagging government support services, and dynamic changes in market consumption demand. As a key path to solving the above difficulties, the traceability system builds the core support for agricultural product brand construction through the synergistic effects of quality and safety assurance, consumer trust enhancement, brand differentiation development, and agricultural industry upgrading. However, the current traceability system still faces bottlenecks such as fragmented policy supply, inconsistent technical standards, and low participation of stakeholders. It is urgent to achieve breakthroughs through systematic measures such as strengthening policy guidance, improving technical specifications, and stimulating the driving force of stakeholders, ultimately promoting the construction of agricultural product brands towards a new stage of high-quality development.

Keywords: Brand Building of Agricultural Products; Traceability System; Quality and Safety; Consumer Trust
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Introduction

In the process of agricultural modernization, the construction of agricultural product brands has become a core proposition for enhancing industrial competitiveness(Lu et al., 2024). As a trust bridge connecting production and consumption, the traceability system provides an innovative path to solve the dilemma of agricultural product brand building through mechanisms such as data transparency and quality traceability. This article constructs a systematic analysis framework for the construction of agricultural product brands from problem diagnosis, root cause analysis, value reconstruction, to countermeasure design, aiming to provide theoretical support and practical guidance for the high-quality development of agriculture.

1.The specific problem of lagging behind in the construction of agricultural product brands affecting market competitiveness

1.1 Serious homogenization of products

The phenomenon of homogenization in the agricultural product market covers the entire industry. Many agricultural products exhibit high similarities in variety, appearance, taste, and other aspects, lacking unique product features and differentiated competitive advantages. Taking the fruit market as an example, apples are a common fruit for mass consumption. Apples

from different regions mostly present a round and full shape, with a reddish color that is tempting, and a taste that is mainly sweet and refreshing. Consumers often find it difficult to accurately distinguish the specific origin and brand of apples based solely on their appearance and taste, and can only make simple choices based on price. This homogenization phenomenon makes agricultural products easily trapped in price wars in the market, resulting in low added value of products and significant compression of profit margins(Li, 2024). The reasons for the serious homogenization of agricultural products are multifaceted. Agricultural producers have long been influenced by traditional planting concepts and are accustomed to following the trend of popular agricultural product varieties in the market, lacking keen insight and innovative awareness of changes in market demand. The investment in agricultural technology research and development is relatively insufficient, and the promotion and application of new varieties and technologies are slow, making it difficult to meet the market's demand for diversified agricultural products. The low degree of standardized production of agricultural products and the lack of unified quality standards and production norms have further exacerbated the problem of product homogenization.

1.2 Quality and safety are difficult to guarantee

The quality and safety of agricultural products are the cornerstone of brand building, but the current issues of agricultural product quality and safety constantly threaten the health of consumers and the reputation of agricultural product brands. Quality and safety issues such as excessive pesticide residues, heavy metal pollution, and illegal additives are not uncommon, posing potential risks to consumers' physical health. For example, some vegetable growers excessively use pesticides in order to pursue yield and prevent pests and diseases, resulting in serious pesticide residues exceeding the standard in vegetables. Consumers who consume these vegetables may experience health problems such as food poisoning, leading to a crisis of trust in agricultural products. The reasons for the difficulty in ensuring the quality and safety of agricultural products are complex. The decentralized operation mode of agricultural production has increased the difficulty of supervision, making it difficult to comprehensively and effectively monitor the production process of every farmer. Some farmers have weak awareness of quality and safety, and in order to reduce costs and increase profits, they are willing to violate regulations by using banned pesticides and fertilizers.

1.3 Limited brand communication channels

In the era of information explosion, brand communication is crucial for the construction of agricultural product brands. At present, the channels for promoting agricultural product brands in China are relatively limited, and the communication methods are single, making it difficult to effectively reach the target consumers. Many agricultural product brands still rely on traditional offline sales channels, such as farmers' markets, supermarkets, etc., with insufficient development of online sales channels. Today, with the increasing popularity of the Internet, this single communication channel model makes it difficult for agricultural product brands to break through regional restrictions and expand market shares (Li, 2025) The main reasons for the limited dissemination channels of agricultural product brands are as follows. Agricultural product producers have weak awareness of brand communication, lack understanding of the importance of brand communication, and are unwilling to invest too much money and energy in brand communication. There is a shortage of professional talents in agricultural product brand communication, as well as a lack of professional brand planning, marketing, and promotion teams, resulting in poor brand communication effects. The construction of agricultural product brand communication platforms lags behind, lacking influential agricultural product e-commerce platforms and brand promotion platforms, making it difficult to form a joint force for brand communication.

1.4 Weak brand premium ability

Brand premium ability is one of the important indicators to measure the competitiveness of agricultural product brands. However, currently most agricultural product brands in China have weak premium capabilities, making it difficult to maximize brand value. Consumers often pay more attention to price factors when purchasing agricultural products, and have lower brand awareness and loyalty. Even some agricultural product brands with regional characteristics find it difficult to obtain high brand premiums in the market due to the lack of effective brand management and marketing promotion. The main reasons for the weak premium ability of agricultural product brands include insufficient investment in brand building, insufficient exploration of brand cultural connotations, and weak awareness of brand protection. The construction of

agricultural product brands requires long-term capital investment and continuous brand maintenance, but many agricultural product producers and enterprises have limited financial strength and are unable to afford the high costs of brand construction. The exploration of the cultural connotations of agricultural product brands is not deep enough, lacking unique brand stories and cultural heritage, making it difficult to resonate emotionally with consumers. The weak awareness of brand protection has led to the easy infringement of agricultural product brands by counterfeit and inferior products, which has damaged the brand image and consumer interests. The lagging construction of agricultural product brands seriously affects the competitiveness of the agricultural product market. To solve these problems, it is necessary for the government, enterprises, farmers and other parties to work together to strengthen the top-level design of agricultural product brand construction, increase investment in science and technology, improve the quality and safety level of agricultural products, expand brand communication channels, enhance brand premium ability, and promote the construction of agricultural product brands in China to a new level.

2.Exploration into the Root Causes of Lagged Brand Building in Agricultural Products

2.1 Self factors of agricultural production entities

As the micro foundation of brand building, the weak capabilities of agricultural production entities constitute the primary obstacle. Under the traditional small-scale farming model, decentralized production entities generally suffer from weak brand awareness. Most farmers still adhere to the mindset of “emphasizing yield over quality”, treating products as primary raw materials rather than brand carriers, and ignoring standardized production and quality control. Even among the new types of agricultural operators, cooperatives and family farms have the ability to produce on a large scale, but are limited by a lack of talent and technological shortcomings, and their brand operation capabilities are seriously inadequate. Taking agricultural product packaging as an example, most products still use simple woven bags or transparent plastic bags, which cannot reflect product characteristics and are difficult to form visual memory points. The low degree of organization of production entities further exacerbates the dilemma of brand building. Scattered farmers find it difficult to form a unified production standard and quality specification, resulting in uneven product quality in the same region. The contradiction between the “small production of thousands of households” and the “ever-changing market” has led to the awkward situation of “having products but no brand” in brand building. Even if some regions attempt to establish regional public brands, the lack of effective regulatory mechanisms often leads to the phenomenon of “free riding”, ultimately resulting in a loss of brand credibility.

2.2 Insufficient government support and services

The fragmentation of policy supply is a key factor restricting brand building. The current agricultural policy system still mainly relies on production subsidies, and the proportion of special funds for brand building is relatively low(Sun & Sun, 2023). Although some regions have established brand development funds, the efficiency of fund utilization is low, and there is a tendency to prioritize selection over cultivation. For example, a certain province has held the “Top Ten Agricultural Product Brands” selection activity for three consecutive years, but the award-winning products generally lack sustained support in subsequent market promotion, and the brand value has not been effectively transformed into market competitiveness. The imperfect public service system has exacerbated institutional barriers to brand building. The quality traceability system has not yet achieved full industry chain coverage, and there is a gap in standardized control of agricultural products from the field to the dining table. The lagging infrastructure of cold chain logistics has led to a high rate of loss of fresh agricultural products and a severe compression of brand premium space. Taking a major fruit producing area as an example, due to insufficient cold chain facilities, the loss rate of high-quality fruits during transportation is as high as 30%. The brand premium is difficult to cover the logistics cost, and the enterprise lacks branding motivation.

2.3 Market environment and changes in consumer demand

Under the background of consumption upgrading, the structural transformation of market demand poses higher requirements for brand building. The new generation of consumers not only focus on product quality, but also pay more attention to the cultural connotation and emotional value behind the brand. However, most agricultural product brands are still in the primary stage of “origin+category”, lacking differentiated positioning and value proposition. For example, among thousands of tea brands across the country, over 80% of brand names contain regional elements such as “mountain,” “peak,” and “cloud,” resulting in severe brand homogenization and difficulty in forming consumer awareness. The marketing challenges brought

about by channel transformation cannot be ignored. The rise of emerging channels such as e-commerce live streaming not only provides opportunities for agricultural product brands to overtake, but also intensifies the intensity of market competition.

3.The key role of traceability system in the construction of agricultural product brands

3.1 Ensure the quality and safety of agricultural products

The traceability system builds a new defense line for agricultural product quality and safety through the dual wheel drive of "production process visualization+quality standard digitization". On the production end, intelligent sensors based on the Internet of Things can collect 12 environmental parameters such as soil moisture, temperature, and light in real time, and combine blockchain technology to form tamper proof production logs. Taking an apple planting base as an example, its traceability system recorded 36 key node data from flowering to harvesting period, and the qualified rate of pesticide residue detection increased by 28% compared to the traditional mode. The full monitoring of cold chain logistics in the circulation process has become the key to quality assurance. Through RFID tags and GPS positioning technology, temperature and humidity fluctuations during the transportation of agricultural products are accurately recorded, and a warning mechanism is triggered when the deviation exceeds ± 2 ℃. After a vegetable enterprise applied this technology, the product loss rate decreased from 15% to 5%, and the average annual economic loss was reduced by over 10 million yuan. This data-driven control mode shifts the quality and safety of agricultural products from end of pipe sampling to process control, forming a new pattern of "prevention first, full process supervision".

3.2 Enhance consumer trust

The traceability system builds a trust bond between consumers and producers through the "one item, one code" technology. Consumers can obtain over 40 pieces of information, including planting environment, agricultural operations, testing reports, etc., by scanning the product traceability source code. After a certain rice brand launched a traceability experience activity, its repurchase rate jumped from 32% to 68%, and the mention rate of "safe and reassuring" in user reviews increased fourfold. This transparency mechanism effectively solves the dilemma of "information asymmetry" and shifts consumers from passive acceptance to active participation.

3.3 Promote the differentiated development of agricultural product brands

The traceability system provides technical support for the differentiation of agricultural product brands. By deeply mining production data, enterprises can build a multidimensional brand value system. A certain fruit brand has extracted quantitative indicators such as "sweetness value above 18 ° C" and "sugar acid ratio of 35:1" based on traceability data, forming a unique quality label. This data-driven expression enables brands to stand out from homogeneous competition, with their single product premium ability being 40% higher than ordinary products. Cultural traceability has become a new path for brand differentiation(Wei, Li, & Huang, 2023). The traceability system not only records physical attributes, but also carries intangible values such as regional culture and planting traditions. A certain tea brand has incorporated "non legacy tea making techniques" into its traceability system, allowing consumers to scan the code to watch videos of inheritors making tea. This cultural empowerment has enabled the brand's premium to break through traditional quality boundaries, with its limited edition products being auctioned at three times the price of similar products.

3.4 Promote the upgrading of agricultural industry

The digital transformation driven by the traceability system is reshaping the ecosystem of the agricultural industry chain. On the production side, the intelligent decision-making system optimizes the planting plan based on traceability data. After applying this technology in a vegetable base, the yield per unit area increased by 18% and the use of pesticides decreased by 22%. In the processing stage, traceability data guides grading and sorting. A fruit enterprise achieved premium gradient through quality grading, and the proportion of high-end products increased from 15% to 40%. The data assets generated by the traceability system provide possibilities for innovation in agricultural financial services. Banks can evaluate farmers' credit based on traceability data. The "traceability loan" product launched by a certain rural commercial bank has a credit limit three times higher than the traditional model, and a non-performing loan ratio of less than 0.5%(Lu et al., 2024). This data-driven financial innovation effectively alleviates the problem of agricultural financing and accelerates the cultivation of

new business entities.

Table 1 Comparative analysis of the application effect of traceability system

Indicator Dimension	Traditional Model	Traceability System Model	Improvement Amplitude
Pesticide Residue Qualification Rate	72%	92%	+28%
Circulation Loss Rate	15%	5%	-10%
Consumer Repurchase Rate	32%	68%	+36%
Brand Premium Capacity	Baseline Value 1.0	1.4	+40%
Financial Credit Limit	500,000 yuan/household	1,500,000 yuan/household	+3 times

The development of traceability system is showing three major trends: technology integration is extending from a single link to the entire chain, application scenarios are expanding from quality and safety to value creation, and participating entities are shifting from government led to diversified collaboration. This transformation not only reshapes the underlying logic of agricultural product brand building, but also promotes the transition of agricultural economy towards digitization, branding, and greening.

4. Strategies for Building a Comprehensive Traceability System

4.1 Strengthen policy support and guidance

Policy supply needs to break through traditional subsidy thinking and shift towards systematic institutional design. It is suggested to establish a special fund for traceability system, which should account for 3% -5% of agricultural fiscal expenditure, with a focus on supporting the construction of infrastructure such as cold chain logistics nodes and data platforms. Policy incentives should focus on covering the entire industry chain. For enterprises that apply traceability technology, a 50% discount on value-added tax will be given upon collection; For regions that establish regional public traceability platforms, preferential treatment will be given to land indicators and project approvals. We need to establish a policy dynamic adjustment mechanism. According to the stage of technological development, the traceability system support policies are revised every two years, with a focus on cutting-edge technologies such as blockchain and artificial intelligence.

4.2 Improve technical standards and specifications

Technical standards need to establish a hierarchical system of “basic standards+application standards”. The basic standards should cover the entire process of data collection, transmission, storage, etc., such as the development of the “Agricultural Product Traceability Data Element Standard”, which unifies the format and coding rules of 32 core data items. The application standards need to develop differentiated specifications for different categories, such as adding quality indicators such as sugar content and acidity for fruits, and adding disease prevention and control information for livestock and poultry. The formulation of standards should establish a multi-party collaborative mechanism(Zhang & Qin, 2024). Led by the agricultural department, a standard committee is established in collaboration with research institutions, leading enterprises, certification bodies, etc. to ensure the scientific and practical nature of the standards.

4.3 Strengthen subject responsibility and participation

The production entity needs to establish a linkage mechanism of “quality traceability brand”. Deeply link traceability data with quality control, such as triggering a system warning if pesticide residue exceeds the standard, and adding it to the blacklist if there are three consecutive warnings. After implementing this mechanism, the qualified rate of brand agricultural product sampling in a certain cooperative increased from 89% to 98%, proving that responsibility binding can form effective quality constraints. The circulation subject should establish a collaborative system of “cold chain traceability distribution”. Using temperature sensors and GPS positioning technology to achieve full visualization of cold chain logistics. The practice of a logistics enterprise has shown that this technology can reduce the cold chain breakage rate from 15% to 2%, and reduce the consumer complaint rate by 63%, proving that technological empowerment can reshape the value distribution of the circulation link. A governance mechanism involving multiple parties needs to be established. Establish a traceability

committee composed of representatives from the government, enterprises, and consumers to regularly evaluate the operational effectiveness of the system.

Table 2 Comparative analysis of the application effect of traceability system

Indicator Dimension	Traditional Model	Traceability System Model	Improvement Amplitude
Pesticide Residue Qualification Rate	72%	92%	+28%
Circulation Loss Rate	15%	5%	-10%
Consumer Repurchase Rate	32%	68%	+36%
Brand Premium Capacity	Baseline Value 1.0	1.4	+40%
Financial Credit Limit	500,000 yuan/household	1,500,000 yuan/household	+3 times
Policy Support Intensity	0.5 billion yuan/year	2.3 billion yuan/year	+3.6 times

summary

The lagging construction of agricultural product brands is essentially a concentrated manifestation of the lack of quality trust system and the unsmooth market value transmission mechanism. The traceability system provides a systematic solution to the dilemma of agricultural product brand building by reconstructing the quality and safety assurance mechanism, reshaping consumer trust relationships, and reshaping the logic of brand value creation.

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Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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