

Research on the Upgrade of E-commerce Edible Agricultural Products Safety Supervision Mode under the Big Data Era

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Abstract. In recent years, domestic and international attention to food safety issues has become increasingly high. Nowadays, the development of e-commerce platform can be said to deeply integrate and change people's daily life. People can purchase edible agricultural products that meet all aspects of their lives through online platforms. However, before the actual application of e-commerce in China, Agricultural products are traded in accordance with traditional circulation methods. E-commerce has prompted the emergence of trading platforms relying on Internet technology. It is also increasingly accepted by everyone as a shopping method. Under such circumstances, the supervision and control of edible agricultural products has become more To complicate, the issue of safety supervision of edible agricultural products in the e-commerce environment has received more and more attention from the society. This paper analyzes the problems existing in the safety supervision of e-commerce edible agricultural products under the era of big data, and puts forward the strategy of upgrading the safety supervision mode of edible agricultural products.

1. Introduction

In recent years, China's e-commerce market has developed at a large scale, and the overall market for e-commerce has maintained rapid growth. The e-commerce-based sales model has changed the way of supply and marketing of traditional edible agricultural products, but the entire B2C industry has been oligopolistic [1-3]. The B2C platforms of Taobao, Jingdong and Suning began to operate the platform of "commercial real estate" to meet the one-stop shopping needs of users [4]. As a new type of transaction, e-commerce has brought production enterprises, circulation enterprises and consumers into a new world of network economy and digital survival. The international influence of China's e-commerce has also been significantly enhanced [5-6]. In terms of food safety, the safety supervision of edible agricultural products has become more complicated [7]. Therefore, the issue of safety supervision of edible agricultural products in the e-commerce environment has been widely concerned by the society [8]. In recent years, the state has increased the safety inspection of food production enterprises, which has greatly promoted the smooth development of safety supervision and protection of food safety in China, but due to the limited energy of the regulatory authorities and the high regulatory costs. There are still many problems in safety supervision [9-10]. We will comprehensively promote the implementation of the responsibility for quality and safety of edible agricultural products, actively promote the innovation of quality and safety supervision system for edible agricultural products, effectively regulate the production and management of edible agricultural products, and continuously improve the consumer confidence and quality and safety satisfaction of edible agricultural products [11-13]. This paper analyzes and discusses the safety supervision mode of e-commerce edible agricultural products.

2. The Safety Supervision Mode of E-Commerce Edible Agricultural Products under the Era of Big Data

1.1 Definition of E-Commerce in the Era of Big Data

E-commerce is a business activity centered on information exchange technology and is based on commodity exchange. It can also be understood as an activity of trading transactions and related

services by means of electronic transactions on the Internet, intranets and value-added networks (VANs). Electronic, networked, and informatized in all aspects of traditional business activities. E-commerce generally refers to the wide range of commercial trade activities around the world. In the open Internet environment, buyers and sellers do not face all kinds of business activities, realizing online shopping for consumers, online transactions between merchants and online electronics. A new type of business operation model for payment and various business activities, trading activities, financial activities and related integrated service activities. First, the e-commerce is divided into broad and narrow e-commerce. E-commerce in a broad sense is a way of conducting business transactions using electronic means. It is a general term for traditional telegraph, telephone and other business transactions. Narrowly defined e-commerce is a form of commodity or service transaction that is used by economic entities with business activities to improve the efficiency of business activities and through the comprehensive use of the Internet and various digital media technologies.

2.2 Analysis of the Development Model of Edible Agricultural Products

The mode of commercial development of edible agricultural products in China presents a variety of characteristics, the most basic is the B2C model, such as Jingdong, Alibaba and so on. With the connection of online transactions and logistics, the transaction is more diversified. In recent years, based on the B2C model, many new models have been derived, such as F2C (farm direct supply mode), C2B (customer customized mode), C2F (order farming mode), O2O (cooperative joint platform mode). And CSA (community support agriculture) mode, China's current main e-commerce model: platform e-commerce model; "own base + home delivery" platform sales model; "own base + procurement + distribution" platform sales model ; "procure + distribution" online sales model; independent sales website to enter the business and so on. The e-commerce development model of edible agricultural products is also increasingly diversified.

2.3 The Supervision Mode of Edible Agricultural Products under The E-Commerce Environment

In the e-commerce environment, edible agricultural products are placed on the network platform for circulation, which makes the two parts of the wholesale market and the sales terminal market no longer exist. The edible agricultural products are only available to the providers, circulation agents and primary product processors. Consumers and logistics service providers stay in the chain. If it is impossible to monitor the producers and logistics services, it will be too late to wait until the products reach the consumers. However, in these two links, they are basically unsupervised. Therefore, The first and second lines of defense have no grasp in the circulation mode of e-commerce platform, and the quality and safety of edible agricultural products are out of control. Here, if the products on the network platform sell food products are formal enterprises, due to the national food safety laws and regulations, most of the quality can be guaranteed, that is to say, the third line of defense basically works; if the network platform sells Edible agricultural products are self-employed or family workshops. Even if they want to ensure food safety, they have little ability to strictly implement them, not to mention a few black-hearted producers. At this time, there is no regulatory measure for the quality and safety of agricultural products. To this end, in the e-commerce environment, the regulatory mode of China's edible agricultural products circulation is mainly qualification certification and consumer feedback.

3. Problems in the Safety Supervision of E-Commerce Edible Agricultural Products

3.1 The Rule of Law System is not Sound

There is no special regulation on the regulation of agricultural products by the Food Safety Law. The Food Safety Law is the fundamental law on food safety, but it does not make specific regulations and regulatory measures for agricultural products. It is only stated in Article 2, paragraph 2 of Chapter 1, the quality and safety management of edible agricultural products, and compliance. Provisions of the Agricultural Product Quality and Safety Law. The establishment of relevant quality and safety standards for edible agricultural products, the publication of information on the safety of edible agricultural products, compliance with the relevant provisions of the Food

Safety Law, the convergence of different laws and regulations. The Food Safety Law, the Agricultural Product Quality Safety Law, the Animal Epidemic Prevention Law, etc. all have safety regulations on food or agricultural products, but they are not well-connected, and there are problems that are not applicable or are not involved. The quality standards for agricultural products traded on e-commerce platforms have not been developed, and because of the different characteristics of agricultural products in different regions, the standardization system for edible agricultural products is rather confusing, which leads to inconsistent circulation standards for different agricultural products and different regions. . In recent years, the development of the food industry has been changing with each passing day, and the food safety supervision system has also undergone great changes. Both the Food Safety Law and the Agricultural Product Quality and Safety Law have been difficult to meet the needs of current social development, and relevant functional departments are actually working. In the past, there are often embarrassing situations that cannot be relied upon and legal operations are difficult to implement. The imperfect legal system has become a paradox that restricts food safety.

3.2 Lack of Early Warning Mechanism for Edible Agricultural Products

At present, the regulation of the safety of edible agricultural products trades on the pre-regulation of the safety and quality of edible agricultural products, and can not be passively regulated only by relying on consumer complaints or waiting for the quality and safety of agricultural products. A complete early warning system for edible agricultural products needs to closely integrate the informatized data platform to build and improve the evaluation standards and related systems for the safety of edible agricultural products in the e-commerce environment; implement tracking and monitoring through the Internet information sharing platform, under the Internet information sharing platform To realize the sharing of data and information related to the production, transportation and sales of edible agricultural products, on the basis of which dynamic supervision is implemented, a scientific early warning analysis model is constructed, and early warning monitoring is carried out according to the structure of early warning analysis to avoid passive situation in regulation. A unified food agricultural product labeling system is adopted to realize the traceability of edible agricultural products, so that once the safety of edible agricultural products arises, timely warning can be made to find out the source of safety problems of edible agricultural products, and the problem can be dealt with in the bud. However, China The failure to use big data, artificial intelligence and Internet of Things technologies to establish a complete early warning mechanism and the lack of early warning mechanisms for edible agricultural products.

3.3 The Food Practitioners' Awareness of Moral Hazard is Weak

People eat food for the day. In today's consumer demand for food quality continues to grow, eating well has become a common requirement of the people. However, the integrity and morality of food practitioners in China are uneven, and the implementation of corporate main responsibility is not enough, which seriously threatens public health. After the reform of the large-scale system, the ethical and social responsibility issues in the food field still exist. Food practitioners are both food producers and consumers of food, and the integrity of food companies affects the public's trust in the entire food industry. This requires food workers to be highly self-disciplined and to be honest. Food safety requires government supervision, and it is inseparable from the integrity and self-discipline of food practitioners. Enterprises should strengthen their awareness of social responsibility and establish a model of knowing the law and observing the law and self-discipline.

4. E-commerce Edible Agricultural Product Safety Supervision Mode Upgrade Strategy

The main cause of the problem. First, China's current rule of law system is not perfect, the construction of relevant legal systems is lagging behind, and it cannot meet the needs of rapid economic and social development. Second, the awareness of food safety in the whole society is still not strong, whether it is functional departments, market entities or ordinary people, food The importance and seriousness of safety are still not deeply understood and understood. Third, the local attention is not enough. Due to the impact of economic development goals, insufficient attention is

paid to the safety of edible agricultural products, as shown in Tab. 1:

Tab. 1 Analysis of Problems in Safety Supervision of Edible Agricultural Products

Types of	The cause of the problem	Proportion (%)
1	Incomplete credit system	24%
2	Regulatory system reform is not in place	17%
3	Insufficient regulatory capacity	21%
4	Limited business size	15%
5	Monitoring resources are not integrated	23%

4.1 Strengthen the Construction of Specialized food Safety Supervision System

In the e-commerce environment, the supervision of the quality of edible agricultural products in China has been carried out in a more passive way in the past. When there is a problem with edible agricultural products, complaints from consumers or exposure by some media can be effective. Management measures can be said that the early warning system for edible agricultural products is not complete. To this end, it is particularly important to establish an all-round early warning system based on big data and artificial intelligence monitoring. It is necessary to retain and share the data information of edible agricultural products, including the data information in the production, storage, transportation and sales links, and then implement dynamic tracking and monitoring through the informatized cloud platform to monitor the consumption of agricultural products from “production-consumption”. The entire supply chain, thus establishing a scientific early warning system, this scientific early warning system effectively avoids the passive situation in the quality supervision of edible agricultural products. On the other hand, experts from food research institutions and testing institutions are invited to explain the knowledge of food production processes, process control, inspection and testing to law enforcement personnel, and to improve professional supervision. Improve emergency response capabilities.

4.2 Improve the Relevant Laws and Regulations on E-Commerce of Edible Agricultural Products

For strengthening the safety supervision of edible agricultural products in China, it is necessary to establish a sound legal system for edible agricultural products safety. This is a basic work and a legal reference for adapting to the development of e-commerce. With relevant laws and regulations in this regard, In order to achieve the legal basis for the supervision of edible agricultural products under the e-commerce environment, the establishment of a practical food law and regulation system has become the top priority for improving the safety supervision of edible agricultural products in China, and it is also to strengthen the edible agricultural products in the e-commerce environment. The primary task of safety supervision is the important proportion of each link in the implementation process, as shown in Fig. 1. It is necessary to speed up the revision of the existing legal system, speed up the revision of the relevant laws and regulations such as the Food Safety Law and the Agricultural Products Quality and Safety Law, and make detailed and clear provisions on the main body, functions and scope of the implementation of safety supervision of edible agricultural products to adapt to current safety. The need to monitor the new situation and ensure that there is no longer an embarrassing situation that cannot be relied upon. Strengthen the connectivity between different laws and regulations. Avoid the problem of different articles fighting between each other and not being able to link effectively.



Fig. 1 Necessary Approaches in the Process of E-commerce Laws and Regulations for Edible Agricultural Products

4.3 Establish a Safety Early Warning Mechanism for Edible Agricultural Products

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5. Conclusion

With the rapid development of e-commerce in China, e-commerce has developed a variety of platform models. These platform models have greatly promoted the integration of supply and marketing of edible agricultural products, and also injected new vitality into the development of China's economy. In terms of food safety, the safety supervision of edible agricultural products has become more complicated. Therefore, the safety supervision of edible agricultural products in the e-commerce environment needs to deal with food safety issues more rigorously.

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