

# **Analysis of the Problems and Countermeasures in the Development of Cold Chain Logistics of Agricultural Products**

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**Abstract:** First of all, this paper analyzes the existing problems in the development of cold chain logistics of agricultural products from the perspectives of difficult application of resources, backward mode, low quality of service and lack of talents. Then, the paper puts forward the feasible countermeasures for the development of cold chain logistics of agricultural products in terms of improving the level of technology and equipment popularization, realizing the optimization and reform of logistics mode, and implementing the comprehensive talent training strategy.

## **1. Introduction**

In recent years, thanks to the popularization and development of electronic commerce, the consumption of agricultural products in the market of our country continues to increase, which brings new opportunities for the related cold chain logistics industry. But at the same time, the mismatch between market demand and supply capacity also makes the cold chain logistics industry of agricultural products bear great challenge pressure.

## **2. The Existing Problems in the Development of Cold Chain Logistics of Agricultural Products**

### **2.1 Problems in the Application of Cold-Chain Logistics in Agricultural Products**

The most basic purpose of the cold chain logistics is to realize the extension of the shelf life of the agricultural products through the temperature control means, so that the agricultural product is always in the ideal state of the “cold” and the “fresh” during the logistics process. However, it is necessary to maintain a high level of equipment resources and technical resources as support for the effective application of temperature control means. In view of the current development of the logistics industry in China, the temperature control technology and related equipment have reached a higher level of research, but the investment cost is high, and there is a large conflict with the actual operating benefit of the cold chain logistics. In this background, about 90% of China's agricultural products still have no temperature control equipment. The transportation of the vehicle is the main, and the operation in the open air is more common. At the same time, even if some agricultural products or logistics agencies maintain the concept of cold chain transportation, it is often affected by the technical cost, and the lower-efficiency cotton quilt, ice bag, canvas cover and other “soil method” are selected, and it is difficult to achieve a high-level and long-term temperature control effect[1].

### **2.2 The Problem of the Backward Development of the Cold Chain Logistics in Agricultural Products**

In the background of “Internet +”, new elements such as big data technology and e-commerce platform are gradually integrated into the operation of the logistics industry, and the logistics industry has achieved a higher level of work reform. However, from the aspect of cold chain logistics, the traditional logistics operation mode still accounts for a large proportion in the practice of the industry. in the supply chain system of the cold chain logistics of the agricultural products, each node enterprise mechanism is usually in the role position of each of the nodes, and only the job

is completed dynamically according to the data of the e-commerce platform, the coordination and coordination between the upstream and the downstream are lacking, and the effective communication is realized, so that the agricultural products are easy to transport, The temperature control is improper in the process of temporary storage and the like The quality of the overall operation of the supply chain is reduced due to the bad growth of the supply chain.

### **2.3 The Cold Chain Logistics of Agricultural Products Has the Problem of Low Quality of Service**

After the main process of cold chain logistics is completed, agricultural products also need to be delivered through third-party logistics enterprises, so that agricultural products can be completely handed over to users. In this way, it can not only fully use the logistics resources of various places, reduce the cost input of the main body of cold chain logistics, but also provide users with more flexible, personalized and living services, and improve the professionalism of agricultural products distribution. However, as far as the current market situation is concerned, the third party logistics enterprises have certain agency attributes, which are independent of the quality management system of cold chain logistics, and have not been paid strong attention to, as a result, agricultural products are often lost in the distribution process. At the same time, although some third-party logistics enterprises themselves also establish cold chain related work system, but the agent, distribution station and other grass-roots organizations have poor self-discipline, difficult to manage and so on, which has caused great obstacles to the overall implementation of the cold chain work system.

### **2.4 The Problem of the Shortage of Talents in the Cold Chain Logistics of Agricultural Products**

The talent is the foundation of the enterprise, and only a group of high-quality and specialized logistics talents can be cultivated to effectively meet the actual demand of the cold chain logistics of the agricultural products, and promote the reform and development of the related models and technologies of the cold chain logistics of the agricultural products. However, from the actual situation, the modern logistics industry in China is in a late stage, and the related education work is in the early stage of the implementation of the development, so it does not form a high-level and large-scale talent situation. In this way, most of the staff of the cold chain logistics of the agricultural products have the basic logistics program knowledge and business management ability, lack of high-end quality such as market research, technology development, system analysis and so on Talent gap.

## **3. Feasible Countermeasures for the Development of Cold Chain Logistics of Agricultural Products**

### **3.1 Strengthen the Basic Construction of Cold Chain Logistics and Improve the Popularization Level of Advanced Technical Equipment**

Good temperature control technology must be supported by advanced technology and equipment. Therefore, in order to ensure the quality stability of agricultural products in the process of cold chain logistics, the relevant enterprises must find out a resource application strategy that integrates economy and functionality. From the current point of view, we can start from two aspects of logistics transportation and logistics warehousing to realize the specific application of all kinds of technical equipment:

First, in logistics and transportation, the main application of block chain traceability technology, intelligent temperature control technology. Among them, blockchain traceability technology is mainly realized by recyclable open source temperature sensor. After the application of this technology, the temperature information and location information of agricultural products can be uploaded to the cloud database through sensors, and then the digital credentials can not be tampered with. In this way, when agricultural products deteriorate, corrupt, lose and so on in the process of transportation, the accident responsibility can be quickly implemented to the relevant shipping

institutions, and then, to a large extent, correct the business management attitude of each link organization and improve the binding force of transportation standards; The energy temperature control technology mainly takes the fully closed thermostatic box and the fresh preservation cabinet as the carrier, and maintains the fresh agricultural products in the semi-hibernating state from 0 °C to 2 °C by means of low temperature temporary cultivation, pure oxygen distribution, dynamic cooling and so on.

Second, in logistics warehousing, the main use of Internet of things technology, radio frequency identification technology. Among them, the Internet of things technology relies on all kinds of sensors and storage equipment, which can monitor the agricultural products in stock in real time, and send out alarm signal immediately when the temperature anomaly is detected, so as to avoid the lag of handling personnel accidents and reduce the loss rate of agricultural products in storage to the lowest level. At the same time, with the support of Internet of things technology, the overall warehouse environment can be presented in the computer interface. Managers can optimize the warehouse environment remotely by driving the system program and adjusting the system parameters, thus significantly improving the logistics. The efficiency of management reduces the labor cost of warehousing management. On the basis of the application of Internet of things technology, RFID technology has been developed, and has gradually become the basis and key technology of cold chain transportation of agricultural products. In the logistics storage center, the relevant personnel can use radio frequency identification technology to complete the automatic label and recording of agricultural product origin, type, temperature and other information, and transmit the label record information to the central system database of logistics cold chain synchronously. In this way, on the one hand, it helps to shorten the time of goods checking and out-of-box inspection, so as to avoid the impact of agricultural products on the external environment. On the other hand, it can also improve the storage information. The transparency is to support the information acquisition ability of upstream and downstream enterprises in the supply chain of cold chain logistics.

In addition, the application of advanced technical equipment is universal and cannot be supported by the macro-control of the government departments. In the background of the continuous development of e-commerce and the gradual improvement of the consumption level of the consumer, the government departments must implement the targeted and sufficient help policy for the cold chain logistics enterprises, such as granting certain tax relief, encouraging the bank to provide the loan benefits, etc., So as to strengthen the technical equipment acquisition capability of the small and medium-sized logistics enterprises, and promote the modernization and the scientific and technological progress of the whole industry of the cold chain logistics industry.

### **3.2 Further Implementation of the “Internet +” Concept and Realize the Optimization and Reform of the Logistics Mode**

Under the new situation, the cold chain logistics enterprises of agricultural products should keep up with the development of the information age, and integrate the advanced information management platform technology such as ERP,MRPII into the operation and management of the logistics supply chain, so as to construct the information network with many interactive channels and high communication efficiency on the basis of the traditional information management mode, so as to promote the smooth communication between the supply chain and the node enterprises. In this way, the specific temperature control requirements of agricultural products will run through the whole process of transportation, warehousing and so on, to avoid the deterioration and damage of agricultural products caused by information errors in node enterprises. In addition, agricultural product merchants can also place their sales vision in the existing large-scale e-commerce platforms such as Jingdong and Taobao, which not only helps to realize the rich expansion of sales channels and improve the convenience of consumers to purchase agricultural products, but also simplifies the transportation process of cold chain logistics and improves the distribution service efficiency of fresh agricultural products.

In addition, in the face of the relatively independent malpractice of the third party logistics

enterprises, the agricultural products cold chain logistics industry should speed up the establishment of a standardized and standardized third party logistics management system, and bring the basic distribution points, logistics business departments and other agencies into the main management structure of the cold chain logistics, so as to unify the distribution time and temperature control level of the third party logistics enterprises. In order to avoid the problems of agricultural products at the end of logistics and transportation, reduce the service experience of consumers [3].

### **3.3 Implement Comprehensive Talent Training Strategy to Alleviate the Pressure of Cold Chain Logistics Talents**

In order to make up for the shortage of talents and promote the innovation and development of cold chain logistics of agricultural products, it is necessary for the relevant enterprises to take an active part in the work of talent education, and to work together with the relevant colleges and universities to construct the modern educational mode of combining production and teaching, such as “double-qualified” teaching and project-based teaching. Through this way, on the one hand, it can build up the communication bridge between school education and social demand, and improve the literacy level of logistics students. On the other hand, it is helpful to construct the enterprise talent application system. The direct delivery of the enterprise post can effectively relieve the talent pressure of the cold chain logistics enterprises. In addition, the cold chain logistics enterprise should also actively introduce the advanced logistics education idea at home and abroad, regularly organize the existing staff team to carry out the technical training meeting, case analysis meeting, experience exchange meeting and other activities, and promote the effective communication of the new and old employees while improving the professional quality of the staff. To create a good cultural atmosphere of the logistics enterprise.

## **4. Conclusion**

In a word, by analyzing the existing problems of agricultural cold chain logistics in technology, mode, service, talent and so on, it is an inevitable measure for the cold chain logistics industry of agricultural products to meet the market demand and adapt to the changes of the times. In the future development, with the overall improvement of the cold chain logistics conditions of agricultural products, the loss rate of fresh agricultural products in logistics transportation will continue to be reduced, and the freshness will also be greatly enhanced, so as to providing more humanized and high-quality service support for the majority of consumers.

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