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The Impact of Technical Barriers to Trade on Agricultural Exports in Shandong Province and Countermeasures

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Abstract: As a large agricultural province in China, Shandong Province, agricultural exports to a certain extent by the impact of technical barriers to trade. This paper analyzes the current situation of agricultural exports in Shandong Province under the influence of technical barriers to trade, combines the reality, points out the favorable and unfavorable impact of technical barriers to trade, and how to deal with technical barriers to trade to put forward the corresponding recommendations and strategies, so as to better enhance the core competitiveness of agricultural products in Shandong Province.

Keywords: Shandong Province; Technical Barriers to Trade; Agricultural Exports

1. Current Status and Development Trend of Domestic Research

1.1. Relevant Studies on the Export Trade of Agricultural Products from Shandong Province

Liu Yu [1] argues that due to the influence of product price, quality and the competition of political power of each country, the agricultural export enterprises are small and weak, and the export structure is dominated by primary products, in addition, the main factor for the decline in the export volume of agricultural products in Shandong Province is the increase in the threshold of access to the export market. Wang Xiaoman [2] argued that due to the substantial appreciation of the RMB and the weak awareness of quality and safety of agricultural products, Shandong Province's agricultural products have appeared to have problems such as lower technological content, small-scale enterprises and poor industry self-regulation. Zhang Yu et al. [3] argued that there are many problems in the export of agricultural products in Shandong Province, such as technical barriers to trade, competitiveness and the size of export enterprises, which will affect the export advantages of agricultural products and make it difficult to compete with the agricultural products of other countries in the international market. Wang Shihao [4] believes that in recent years, Shandong Province export enterprises own scale is insufficient, the distribution of export markets is overly concentrated as well as the export of too many types of products is its distinguishing feature, which will not only affect the development of agriculture will also reduce the number of consumers. Zhou Zhenpeng et al. [5] pointed out that the agricultural exports of Shandong Province are mainly based on aquatic products, seafood and vegetables, and the market is mainly concentrated in Asia. The single type of agricultural exports, low value-added, lagging behind in product branding, and the concentration of export markets are its prominent features. Chen Yan [6] argues that in recent years, the proportion of agricultural exports from Shandong Province has grown weakly, the export structure is single, mainly labor-intensive agricultural products, the mode of export is usually general trade, and the export value added is low, which makes the international competitiveness of Shandong Province's agricultural exports very low.

1.2. Relevant Studies on the Impact of Technical Barriers to Trade on China's Agricultural Exports

Wang Ying [7] found that technical barriers to trade make the enterprise economy suffer a large number of losses and the loss of comparative advantage, but also promote agricultural exports step by step to the developed countries, bringing about the upgrading of industrial structure. Tang Jinjuan [8] found that technical trade barriers weaken farmers' income and international competitiveness, but at the same time, they also bring scale, standardization, and branding, so that they converge with internationalization. Liu Jianxi [9] showed that the negative impact of technical barriers to trade not only limits the development of international trade, but also restricts the consumer's choice of goods, harms the rights of consumers, and puts developing countries in a more unfavorable position in agricultural exports. He Min et al. [10] used empirical analysis and introduced the gravity model, and found that the most significant negative impact on China's agricultural products is technical barriers to trade. Each percentage point increase in technical trade barriers reduces agricultural exports by 0.003 percentage points.

1.3. Relevant Studies on the Impact of Technical Barriers to Trade on the Export of Agricultural Products from Shandong Province

Zhang Yi [11] based on panel data analysis, in the short term, technical barriers to trade will obviously inhibit the export of agricultural products in Shandong Province, while in the long term, there is a clear positive impact, that is, a facilitating effect. It is pointed out that Shandong Province has to improve the quality and safety of export agricultural products and production technology system. Liang Peipei [12] believes that technical barriers to trade directly limit the number of agricultural products in Shandong Province, and constrain the market for agricultural products, triggering trade disputes, only the establishment of an industry early warning mechanism, strengthen enterprise teamwork and strive to produce high-quality products in order to effectively deal with technical barriers to trade. Zhang Fan et al. [13] showed that the positive effects of technical barriers to trade can improve the overall quality of agricultural products, while the negative effects may lead to the production and trade of the "impossible task". Therefore, the improvement of the service system, the improvement of scientific and technological inputs, and the decision-making of business leaders are crucial.

1.4. Development Trends

By comparing the current situation of Shandong Province's agricultural exports as pointed out by scholars in the above literature, combined with the impact of technical barriers to trade on the province, it is found that its impact on Shandong Province's agricultural exports is unfavorable in the short term, but in the long term, it is a good opportunity for development. This paper reads the literature and finds the data to study the current situation of the province's agricultural exports, and combines it with the reality to analyze the impact of technical barriers to trade on its agricultural exports, so that the agricultural products of Shandong Province will strive to improve themselves in the face of the increasingly fierce international competition and complex international situation, and improve the standards of technology, sanitary and quarantine, as well as packaging and other aspects. This will not only promote the faster and better development of the export trade of agricultural products in Shandong Province, but also improve its competitiveness and adapt to the trend of the times.

2. Status of Development of Agricultural Export Trade in Shandong Province

2.1. Scale of Agricultural Exports from Shandong Province

In recent years, even though Shandong Province's agricultural products have been continuously hit by foreign technical barriers to trade, the trend of growth has been largely maintained. It can be concluded from Figure 1: in 2012-2015, the export value remained around 95 billion yuan, and in 2017-2018 and 2020-2021, the export value of Shandong Province had a small decline, down 0.2 and 1.5 percentage points, respectively. 2019-2020 gradually climbed up, with an export growth rate of 7.32%, 1.81%. Among them, in 2019, the agricultural products of Shandong Province maintained a sustained growth while rising substantially, with the growth rate ranking first in the last five years. By 2020, the export of agricultural products in Shandong Province reached the highest level in the past five years, with an export value of 1.2 billion yuan, up 1.9 percentage points from 2019. By 2021, the export value of agricultural products declined slightly by 1.902 billion yuan due to the epidemic and other impacts.

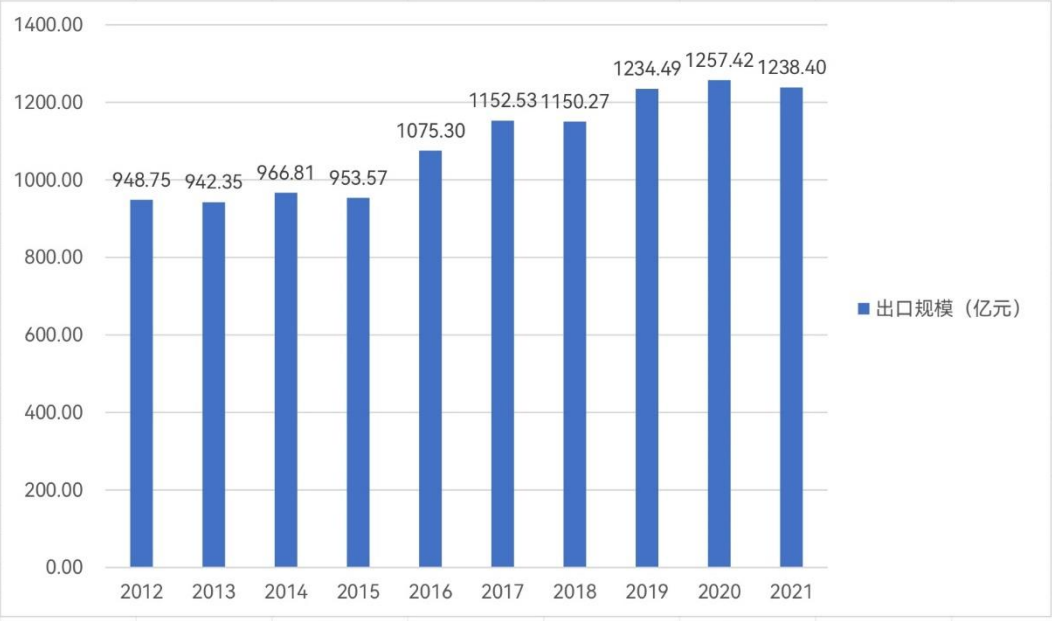

Figure 1 Export value of agricultural products in Shandong Province, 2012-2021 (Data source: Jinan Customs, People's Republic of China http://jinan.customs.gov.cn/)

2.2. Shandong Agricultural Products Export Market

According to Table 1, it can be analyzed that the province's agricultural exports are mainly distributed in Asia, distributed in Japan, the European Union, ASEAN and other regions, in which the main exporter of Shandong Province's agricultural products is Japan, accounting for a share of about 25%, which has been ranked in the first place of exports in recent years, but the export share has declined slightly in consecutive years since 2017, and has risen slightly in 2021. Since 2018, the second largest exporter of agricultural products from Shandong is ASEAN, with a share of exports rising from 14.66% in 2017 to 20.30% in 2020, but with a decline in the share of exports by 2021, down 1.37%.The EU countries' share of Shandong's agricultural exports has remained at around 15% from 2012-2019, but by 2020, its export share drops sharply, down by 4.6 percentage points, and in 2021, the export value rises slightly, up by 0.45 percentage points. It can be seen that due to the impact of technical barriers to trade such as Japan, South Korea and ASEAN, Shandong's agricultural export market has shifted, and thus the share of export value in the main exporting countries has decreased.

Table 1 Major Market Shares of Agricultural Products in Shandong Province, 2012-2021

Particular year	**Country (region)**	**Japanese**	**EU**	**ASEAN (Association of Southeast Asian Nations)**
2012	Exports (billions of dollars)	306.07	149.23	131.45
	Percentage (%)	32.26%	15.73%	13.86%
2013	Exports (billions of dollars)	290.20	156.21	140.34
	Percentage (%)	30.80%	16.58%	14.89%
2014	Exports (billions of dollars)	306.07	160.66	135.89
	Percentage (%)	31.66%	16.62%	14.06%
2015	Exports (billions of dollars)	260.94	149.10	125.17

	Percentage (%)	27.36%	15.64%	13.13%
2016	Exports (billions of dollars)	268.51	169.38	158.09
	Percentage (%)	24.97%	15.75%	14.70%
2017	Exports (billions of dollars)	291.6	183.1	169
	Percentage (%)	25.29%	15.89%	14.66%
2018	Exports (billions of dollars)	290.9	179.1	188.4
	Percentage (%)	25.29%	15.57%	16.38%
2019	Exports (billions of dollars)	305.5	200.1	217.1
	Percentage (%)	24.75%	16.21%	17.59%
2020	Exports (billions of dollars)	283.8	149	255.3
	Percentage (%)	22.57%	11.85%	20.30%
2021	Exports (billions of dollars)	284	152.4	234.4
	Percentage (%)	22.93%	12.30%	18.93%

2.3. Product Structure of Agricultural Products Exported from Shandong Province

According to the structure of agricultural products exported from Shandong Province, the province mainly exports aquatic and marine products, vegetables as well as dried and fresh fruits and vegetables. As shown in Table 2, aquatic and marine products are the most exported agricultural products, accounting for about 25% of the province's agricultural exports, with an export value of about 30 billion yuan, and the export value continued to rise in 2013-2019, and since 2020 it has been on a downward trend. Vegetables and edible mushrooms are the second most exported agricultural products, with a slightly lower export value than aquatic and marine products, with a significant decline in 2018 and 2021. Dried and fresh fruits and nuts exports ranked third, with exports increasing since 2015 until $14 billion in 2020, but declining by $3.3 billion in 2021. Overall, all types of products declined in 2021, and aquatic and seafood products declined slightly lower, which shows that technical barriers to trade mainly restrict vegetables, nuts and other products.

Table 2 Product Structure of Agricultural Products Exported from Shandong Province, 2012-2021

Particular year merchandise	**Marine and seafood products (billions of dollars)**	**Vegetables and edible mushrooms (billion dollars)**	**Dried and fresh fruits and nuts (billions of dollars)**
2012	143.32	185.78	136.22
2013	249.52	219.59	153.39
2014	253.48	223.42	150.48
2015	275.16	230.47	48.97
2016	302.4	298	61.8
2017	324	304.6	69.21

2018	336.9	250.4	83.4
2019	350.2	288.5	99.7
2020	296.6	302.6	140
2021	285.9	276	107

3. Technical Barriers to Trade Encountered in the Export of Agricultural Products from Shandong Province

For the technical barriers to trade encountered in the export of agricultural products in Shandong Province, Japan and South Korea, the European Union and the United States for the implementation of the most stringent and extensive restrictions on the country, they will add new standards every year to protect their own agricultural products, to limit the import of foreign countries, which led to a decline in the vitality of exports of agricultural products in Shandong Province, the cost of rising.

3.1. Strict Pesticide Residue Limit Standards

The pesticide residue limit is the limited amount of pesticide residues allowed directly or indirectly on agricultural products in each country. In this standard, developed countries are obviously much lower than the pesticide residue limits set by developing countries, because these countries out of the consideration of safeguarding their own interests, Shandong agricultural products into the market of developed countries is more difficult. Among them, Japan is the most stringent and detailed standards for pesticide residue limits set by the country, which requires all agricultural products entering Japan to meet the "positive list system" standards, even if there is no maximum residue limit of pesticides, the content of its products shall not exceed the "unified standard", that is, 0.01mg/kg, for vegetables. For vegetables, Japan has other strict requirements such as microbiological requirements. In the past two years, in Japan's "positive list" of imported agricultural residue limits in the new 51,392 limit, more than 800 enterprises in Shandong Province, nearly 500 million U.S. dollars of vegetable exports to Japan has caused a huge impact, which makes the Japanese and Shandong produced a more serious trade friction.

In addition, the European Union is also on the import of agricultural products drug residue limit standards are becoming more and more stringent, since early September 2008, the European Union began to formally implement the new pesticide residue limit standards system (396/2005), the implementation of the country, including the European Union's 27 member states, the number of pesticide residue limit from the initial 39,000 more than 118,000 rise, the European Union can be seen to imported The requirements of the EU on imported agricultural products are getting higher and higher. In such a standard, Shandong as a vegetable and aquatic seafood as the main export province, the export volume will certainly be greatly reduced, which in turn affects the export volume of China.

3.2. Stringent Testing Standards

3.2.1. Command Detection

Order testing is one of the testing standards for imported goods in Japan, and it is based on the relevant provisions of the Food Sanitation Law, and importers are required to conduct appropriate testing for goods that have a high probability of violating the law. It is mandatory to carry out 100% testing on a lot-by-lot basis, and the content of the testing is stipulated by administrative order. As a province with a single type of agricultural products and a concentrated export market, a large number of agricultural products from Shandong Province must undergo the relevant order testing inspection when entering Japan. For example, at the end of 2021, Japan's Ministry of Health, Labor and Welfare (MHLW) issued a notification that the food products produced by Laiwu Wanxing Fruits and Vegetables Food Processing Co. "The Ministry of Health, Labor and Welfare of Japan issued a notice that sweetener was detected in the food produced by Shandong Laiwu Wanxing Fruit and Vegetable Food Processing Co. Due to Japan and its stringent standards, not only

increase the export procedures of agricultural products in Shandong, but also increase the burden of personnel, bringing an increase in the cost of agricultural products and the difficulty of export rise.

3.2.2. Monitoring

"Monitoring and inspection" is a routine sampling inspection of imported food products in Japan, which is carried out on an annual basis for the purpose of strengthening monitoring in the event of a violation of the Food Sanitation Law. For example, Shandong onions, if exported to Japan, may require 510 test indicators, but in the domestic market, the test indicators may be only a few or even no test. If the export of an agricultural residue exceeds the standard, Japan will require the government outside of the third-party testing organizations to carry out enhanced inspection, the sampling rate of 30%, if still exceeds the standard, will require inspection of all goods, once the problem will be returned. From the point of view of exports to Japan in recent years, the quality of agricultural exports from Shandong Province has improved, but the number of exports has not increased significantly, apparently by Japan's more stringent testing, obviously extremely unfavorable to the province's exports.

3.2.3. Autonomous Testing

Self-inspection is a mandatory test when importing, which is required after layers of domestic inspection. It is used less frequently than "monitoring" and "ordering inspection", but if the test is not in place, there is a high probability of being subjected to Japan's It is less frequently used than "Monitoring" and "Ordered Inspection", but if the inspection is not carried out properly, it is very likely to be subjected to Japanese inspections such as administrative inspections and sampling. In the "Positive List System", any food that violates the third paragraph of Article 11 of the "Food Sanitation Law Revision 2003" shall not be produced, imported, processed, used and sold, which requires Shandong's traditional agricultural products to be exported more cautiously in their own testing. In May 2019, Japan began to formally implement the "Positive List System for Agricultural Residues in Food", which is called the "world's toughest" and "the most stringent". "the world's toughest pesticide residue ratio", in order to cope with this system, Shandong Province, the commodity inspection department to strengthen the export inspection, about the cost of a test reaches 1,000 yuan, nearly 10 times higher than in the past, the province a lot of agricultural products by a variety of inspection fees "overwhelmed", the international competitiveness has dropped significantly. International competitiveness has declined significantly.

3.3. Requirements Related to Green Labeling and Packaging

3.3.1. FDA Testing

Over the years, the U.S. agricultural trade continues to maintain a surplus, which is inextricably linked to the U.S. government's many import restrictions on China and trade protection policies, which have a strong trade protection color. The U.S. FDA testing agency is one of the executive agencies set up by the government in the Ministry of Health and Public Hygiene. In order to ensure the safety and health of the entire food chain from food raw materials to consumption, in 1973, the U.S. FDA for the first time the "Hazard Analysis and Critical Point Control" (HPCCP) applied to canned food processing. Among them, the United States to restrict the management of imported food is the main measure of the FDA's "automatic detention". Sample tests show that if the pesticide residues exceed the standard, harmful elements of human health hazards, imported goods will be "automatically detained". "Automatic detention" goods can only be imported and sold after passing the inspection of the U.S. laboratory. In July 2019, the U.S. FDA testing agency of two enterprises in Shandong, China's vegetables and roasted black rice food implementation of automatic detention, suggesting the detection of a number of pesticide residues, which means that the export enterprises should be in strict accordance with the standards of the exporting country to carry out production to avoid the risk of being detained.

3.3.2. Packaging Requirements for Green

The European Union (EU) is the second largest export market for agricultural products in Shandong Province, and is also the organization that imposes the most and strictest technical barriers to trade. The EU has always set up import barriers to other countries' products through packaging legislation, which requires

that the packaging of agricultural products contain detailed descriptions of the exact quality of the ingredients, special storage conditions, shelf life, date of production, etc. 94/62, EC is based on the EU's environmental safety, rational use of resources and energy, the requirements of all the packaging chain, which has been put into full implementation in 1997, to promote reuse, recycling and recyclability and other environmental requirements, the EU has formulated 91/2092, EC. Advocacy of reuse, recycling and recyclable environmental requirements, the EU developed 91/2092, EC "EU Organic Agriculture Regulations" and in August 2000 was formally implemented. The EU has been an important export market for peanuts from Shandong Province. As aflatoxin can easily contaminate peanuts as an agricultural product, the EU has stipulated the aflatoxin limit and packaging requirements with a Health Certificate, and the sampling rate of peanuts from Shandong Province has been increased to about 20% in 2009-2021. This further increases the difficulty of exporting agricultural products from Shandong Province.

3.3.3. Labeling Requirements are Well Documented

One of the major countries restricting the export of agricultural products from Shandong Province is South Korea, which requires all imported agricultural products to be labeled with the South Korean trademark, which should include clearly identifiable text: the name of the type and category of the product, the name of the importer, the date of production and shelf life, and the name of the raw material and the main ingredient, and, on July 12, 2002, South Korea also began to mandatorily label agricultural products processed in soybeans, corn, and so on. Since March 23, 2020, Korea has revised the requirements for packaging and clarified the requirements for the use of graphics and characters related to the organic labels of "eco-friendly", "organic" and "pesticide-free". At the end of February 2015, 2,200 tons of garlic from Shandong were returned to South Korea, and the economic loss caused by the return was as high as 10 million yuan, and in this year, South Korea continued to revise and improve the "labeling standards for food, etc.," etc., the packaging and labeling of agricultural products have stringent requirements, which can be seen in the province's garlic by the standard to a certain extent.

4. Materials and Methods

4.1. Positive Impacts

4.1.1. Optimize Agricultural Product Testing Standards to Connect with Internationalization

Of all the countries restricting the export of agricultural products from Shandong Province, the technical barriers to trade measures imposed on the province by individual countries are most notable in terms of the standards system. In order to meet the testing standards of exporting countries as much as possible, and to reduce the gap between agricultural product quality supervision and certification and those of developed countries, Shandong Province has further strengthened the supervision of agricultural products and optimized the quality of agricultural products as a way to enhance the efficiency of exports. During the "13th Five-Year Plan" period, Shandong Province has continued to improve the capacity of agricultural product quality and safety testing, with 131 agricultural monitoring organizations passing the dual certification, 2.1 times more than in 2015, and more than 5,000 cases investigated and handled by the agricultural system, with the province's agricultural product monitoring pass rate stabilizing at more than 97%, which has further led to the enhancement of the quality of the province's agricultural products , creating internationally recognized corporate product brands.

4.1.2. Promote Technological Innovation in Agricultural Products and Bring about Upgrading of Industrial Structure

At present, the province's agricultural products are mainly labor-intensive products with low technological content, and the processing, production and export of raw materials have not yet formed an integrated model, which makes it difficult to yield advantages to occupy a favorable position in the international arena. Under the influence of Japan, South Korea, the United States and other technical barriers to trade, Shandong Province recognizes that the core competitiveness of enterprises need to be improved, the province's agricultural technical regulations and local standards in 2020 amounted to more than 2,600, "three products and one standard" more than 1,000 agricultural products, the provincial level of standardized

agricultural production bases amounted to more than 1,300 and The province has established a complete technical system for the cultivation, breeding and technical promotion of quinoa, sea water rice and other food crops, and has promoted the upgrading of agricultural industry organizations.

4.1.3. Optimizing Market Structure and Promoting Enterprise Development

Technical barriers to trade is a product of scientific and technological development, with the progress of science and technology, technical barriers to trade is more cumbersome and complex, the effect is constantly enlarged, objectively requires Shandong Province to continue to carry out institutional innovation to optimize the market structure, through the systematic design, abandon the traditional mode of development, reduce the environmental costs and consumption of resources, in order to obtain greater economic benefits, so as to promote the development of the agricultural enterprises in the 2022 year. Since 2021, the agricultural products economy of Shandong Province has shown the trend of "stable to good, improving quality in progress", the province's foreign-invested enterprises exported 26.73 billion yuan of agricultural products, accounting for 21.6%, the state-owned exports of 1.03 billion yuan, the private sector exported 96.08 billion yuan, accounting for 77.6% of the total value of exports, which is the main force of the export of agricultural products. It is the main force of agricultural products export.

4.2. Negative Impacts

4.2.1. Increased Certification Costs and Increased Costs of Agricultural Exports

The long-term effects of technical barriers to trade are reflected in increased operating and export costs for agricultural products. First, most countries require quality certification for agricultural products, which increases the cost of certification for agricultural exports; second, there are differences in the provisions of standards for agricultural products in many countries, which increases the cost of staff training; third, the European Union, South Korea and other countries are more stringent on the labeling and packaging of agricultural products, which leads to an increase in the cost of product packaging. Japan's "positive list system", the United States FDA testing and inspection, as well as South Korea's enactment of the "Food Sanitation Act" and other technical barriers to trade measures undoubtedly increase the difficulty of certification of agricultural products in Shandong Province, especially in recent years, the United States, Japan, but also for the previous agricultural products do not need to be imported to test the provisions of the new testing standards.

4.2.2. Constraints on Agricultural Export Markets and Reduced Export Volumes

From the market distribution of the province's agricultural products exports in recent years, its market is mainly concentrated in Japan and the EU countries, which rely on higher science and technology as well as advanced equipment, set strict technical standards, cover an increasingly wide range of products involved in a large number of product categories, which in turn restricts the export market of Shandong's agricultural products, and limits the rise in the number of exports. In 2019, Shandong Province's exports to Japan and the EU of agricultural products were 30.55 billion yuan and 20.01 billion yuan respectively, accounting for about 40% of the total exports, while in 2020, Shandong's exports of agricultural products to Japan and the EU fell to 28.39 billion yuan and 14.9 billion yuan, accounting for about 35% of the total exports, which shows that agricultural products in Shandong Province are affected by the threshold of the export market, and the risk of uncertainty increases.

4.2.3. Weakened the Competitive Export Advantage of the Province's Traditional Agricultural Products

As the province's agricultural products are mainly primary products and less processed, although exports have ranked first in the country for 23 consecutive years, they are mainly volume-based, with insufficient attention paid to the quality of agricultural products, and traditional agricultural products, which are often needed to stabilize the export market, have encountered different types of obstacles to their development and have lost their competitive edge as technical barriers to trade have been imposed. For example, the province's traditional agricultural products-vegetables-exported 27.6 billion yuan in 2021, a drop of 2.66 billion yuan from 2020, but there was no significant drop in the export value of non-traditional agricultural products, which shows that, affected by the increasingly stringent system for traditional agricultural products from importing

countries like Japan's "Positive List System," Shandong Province passively increases the difficulty of exporting and the limitations of distribution, which in turn makes the province's traditional As a result, the province's traditional agricultural products export position is gradually at a disadvantage and its competitive advantage is weakened.

5. Countermeasures and Suggestions for Dealing with Technical Barriers to Trade in Agricultural Exports

5.1. Government Level

5.1.1. Improving the Quality and Safety System of Agricultural Products

The lack of attention paid to quality standards for agricultural products in Shandong Province has resulted in many indicators for agricultural products entering foreign markets not being met. Therefore, the province needs to improve its quality and safety system through the government's careful study of foreign quality standard systems, its efforts to move closer to international standards, and its formulation of relevant standards for agricultural production procedures, as well as the promotion of green and organic foods and the publicity of high-quality agricultural products. In addition, the government can build agricultural product quality testing centers, implement a combination of sampling and self-inspection testing, and increase the frequency of testing and supervision of agricultural product quality and safety, thereby improving the efficiency of agricultural product export testing.

5.1.2. Establishment of a Mechanism for Providing Information on Technical Barriers to Trade

Most of the enterprises in Shandong Province have a low level of understanding of various tests and information of exporting countries, which makes the export of agricultural products very vulnerable to the impact of technical barriers to trade in exporting countries. The government can rely on the network and other platforms, the establishment of technical barriers to trade to provide a mechanism to build a network information service platform, agricultural enterprises in the platform to share and timely access to the latest exporting countries to restrict the standard information, while the government can analyze the data on the platform to compare the technical barriers to trade measures in different countries, to ensure that agricultural exports in Shandong Province to obtain accurate, efficient and complete information at the first time. This ensures that agricultural product exporters in Shandong Province can obtain accurate, efficient and complete information in the first time, reducing the cost of seeking export information and effectively responding to technical barriers to trade.

5.2. At the Level of Industry Associations

5.2.1. Assisting in the Establishment of Industry Early Warning Mechanisms to Reduce Certification Costs

Industry associations can, by virtue of their special status and advantages, utilize their extensive information collection channels and resource advantages to play the role of communication and coordination. For example, it can join hands with the government to create an information service platform, utilize the huge resource advantage to obtain the development dynamics of agricultural products, so that the export enterprises can obtain rapid and effective information. In addition, industry associations can actively establish contact with foreign trade associations, often communicate industry information, timely access to information on the quality of agricultural products certified by the exporting countries, and take the initiative to publicize the certification fees of the exporting countries in the relevant network platforms, as well as to jointly supervise the behavior of enterprises by the government, so as to make the development of enterprises and the country's predetermined economic goals, and to reduce the cost of certification of the export of agricultural products in Shandong Province.

5.2.2. Supervision of the Business Behavior of Agricultural Export Enterprises

With the rapid development of agricultural export trade in Shandong Province, foreign anti-dumping and technical barriers to trade in the province are bound to increase. As a coordinating and communicating body between enterprises and the government, the industry association can supervise and urge the standardization construction of enterprises, and regulate the business behavior through the international quality certification

system and environmental system certification (ISO14000), etc., and check the internal management of the enterprises from time to time to cope with the US FDA testing and Japan and South Korea and other stringent testing standards. On the other hand, the association can also organize special personnel to carry out dynamic monitoring of quality standards and environmental standards of agricultural enterprises, forming a set of effective monitoring mechanism to remind enterprises to face the standards of exporting countries, timely quality management and price adjustment to ensure rapid growth and quality improvement.

5.3. Enterprise Level

5.3.1. Improving the Quality of Traditional Agricultural Products and Technological Innovation

Agricultural product manufacturers should improve the business model of agricultural products, accelerate the upgrading and transformation of product equipment, improve the quality testing standards of agricultural products, and actively respond to the call of the government and industry associations as a way to improve the quality level of agricultural products and technological innovation. For example, enterprises in Shandong Province can guide the promotion and application of new high-quality varieties of high-quality wheat, high-protein soybeans, machine-picked corn, special facility vegetables, and specialty aquatic products, and at the same time, integrate green production technology, develop the combination of planting and cultivation, and ecological recycling of agriculture, to improve the quality of agricultural products of enterprises.

5.3.2. Build a Green Brand and Emphasize Environmental Protection

Enterprises need to take environmental considerations into account while improving the quality of agricultural products. In order to build a green brand, green production is needed, and environmental protection strategies of integrated prevention and control are applied to the production process of agricultural products in order to reduce the loss of materials and production capacity. At the same time, green packaging can be used, i.e., choosing recyclable, environmentally friendly and renewable materials for packaging to reduce the environmental pollution caused by non-biodegradable materials. In addition, to obtain the international market pass is very necessary for the enterprise's green branding, the enterprise can actively improve the production standard system of agricultural products, and strive to pass the ISO9000 system certification, to be recognized by the brand awareness.

5.3.3. Expanding Exports from Countries along the Belt and Road to Diversify Agricultural Export Markets

Enterprises can strengthen cooperation with countries along the "Belt and Road" by actively exploring new agricultural technologies and building green brands, and increase the development of new markets, especially countries with import demand, to solve the problem of concentration of the export market for agricultural products in Shandong Province, and to reduce the implementation of technical barriers to enterprises by countries along the ASEAN and other countries. Technical barriers to trade. As Shandong Province's cotton, mulberry sericulture science and technology strength is very strong, agricultural enterprises can export these products to five countries in Central Asia and other countries along the "Belt and Road", and the development of agricultural complementarity with these countries to realize the agricultural products of Shandong Province, "going out", so that the export market Diversification.

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