The development trend and problems of Chinese condiments

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Abstract: After more than 20 years of accumulation, Chinese condiment market has achieved considerable development. While the market scale and output are expanding year by year, condiments are also changing from traditional to compound and functional segmentation. The condiment market will also become more concentrated, and the speed of introducing new technologies will accelerate, shifting toward a more consumer-friendly direction. However, there are also some problems during the development. This article lists some of the problems exposed by the development of the condiment market and proposes some improvement measures.

1. Introduction
Condiments refer to supplementary foods that can increase the color, aroma and taste of dishes. Its main function is to improve the quality of dishes, meet the sensory needs of consumers, thereby stimulating appetite and improving human health. Broadly speaking, condiments include salting agents, sour agents, sweeteners, umami and spices, etc[1]. According to the national standard of condiment classification (GB/T20903-2007)[2], condiments include edible salt, sugar, soy sauce, vinegar, monosodium glutamate, and other 17 categories, which are widely used in diet, cooking and food processing. Due to the special nature of the edible salt and sugar industries, these two types of products are not included in the general statistics of the total amount of condiments. Among the other 15 types of condiments, soy sauce, vinegar, and monosodium glutamate are ranked the top three in the condiment industry market[3].

2. Current status and overview

2.1 Current situation of my country's condiment market
In the past two decades, my country's condiment industry has developed rapidly. Since 2003, the condiment industry has entered a stage of rapid development and has become a new economic growth point in the food industry. my country's condiment industry has achieved breakthrough development, with rapid growth in output and sales[4] (see Figure 1), and the variety has become increasingly abundant. The condiment industry has become an important part of Chinese food industry.
The development of the condiment industry has a positive effect on improving people's quality of life, meeting the growing and escalating consumer demand for safe, diverse, healthy, nutritious and convenient food, expanding domestic demand, and promoting national economic growth. At present, China's condiment industry has gradually stepped out of the traditional experience model, and the era of industrialization, scale and branding of condiments has arrived.

2.2 Development trend of condiments in my country

2.2.1 Functionalization of traditional products Condiments with a long history in my country, such as soy sauce, vinegar, fermented bean curd, bean paste, noodle sauce, etc., are in the process of product renewal and functional subdivision. The public’s current requirements for condiments make traditional condiments subdivide new functions, fully It embodies the concept of "functionalized mass food".

2.2.2 Multifunctional condiments Apply or add other flavor materials to traditional condiments to give them richer flavoring functions. For example, vinegar products with garlic, ginger, and spices; soy sauce with shiitake mushrooms, straw mushrooms, shrimp, seafood, and chicken essence.

2.2.3 Special condiments Adjust ingredients and flavor according to edible function. For example, vinegar with different functions such as dipping, cold dressing, noodles, beauty and drinking; soy sauce with different functions, such as braised, dipping, barbecue, and noodles.

2.2.4 Nutrition and health condiments The raw materials are adjusted according to the nutritional and health-care effects to prepare condiments with different nutritional and health-care effects. For example, red yeast rice vinegar, calcium supplement vinegar, multi-dimensional vinegar, buckwheat health vinegar. Iron-fortified soy sauce, low-salt soy sauce, vitamin soy sauce, children's soy sauce, medicated soy sauce, etc. Salt products already have mineral-added salt, riboflavin salt, vitamin A salt, etc. In addition to adding nutrients, the nutritional components of condiments can also include low sugar, low sodium, low fat, high fiber, beauty, weight loss and other aspects.

2.2.5 Compounding of seasoning products The characteristic of our country's cooking is that the taste is complex, and the single-flavored condiments are difficult to meet the higher demand. Therefore, a variety of condiments are used in different proportions to present different tastes. Due to the difficulty of cooperating with a variety of single-flavor condiments and the complexity of the operation, it is more difficult for those who are not proficient in cooking to prepare a variety of ingredients before cooking. As
a result, compound condiments came into being. My country's annual output of compound condiments has a large gap. In terms of quantity, it is far from meeting the demand; in terms of variety, it is concentrated on a few flavors such as spicy and umami; in terms of use, it is mainly for freshness, soup, dipping, and table sauces. It fails to cover many aspects of Chinese cooking. In terms of seasonings for dishes, the variety is relatively limited. However, my country has a long history of dietary traditions and diversified cooking seasonings. It is possible to develop various flavors for dishes, as well as seasonings for mixing vegetables, stews, stir-fries, fried dishes, noodles and braised pork, and develop their varieties. The richness is immeasurable.[5]

2.3 Development Trend of Condiment Market

After several industry reshuffles and the integration of domestic and international capital, the condiment market in my country has transformed from a relatively lagging industry to a fierce market competition industry. As consumption continues to upgrade, market competition is intensified, and the market threshold of condiments is further improved, and the process of SME survival of the fittest will also speed up. Due to the remarkable regional characteristics of condiment consumption in my country, well-known and outstanding domestic brands will still occupy a dominant position for a long time to come[6] (Figure 2).

Fig 2 Operating income statistics of representative companies in China's condiment industry in 2019 (hundred million Yuan)

2.4 Development trend of condiment industry

2.4.1 The industry accelerates adjustment and the market will become more concentrated

In the rapid development of the compound seasoning industry, as the society pays more and more attention to food safety and the state continues to increase environmental protection supervision of enterprises, some smaller enterprises with irregular operations will gradually be eliminated, and the development of advantageous enterprises will become more important. Rapidly, industry integration will be further accelerated, market concentration will continue to increase, and large-scale enterprise operations have become an inevitable trend for industry development.

2.4.2 Market competition has shifted from pure price competition to comprehensive strength competition

With the increasing consumption level of residents, as a compound seasoning for fast-moving consumer goods, price is no longer the most important factor that consumers care about. To stand out in the fierce market competition and win the trust and love of consumers, companies must establish a good brand image in the market, establish unique product features and practical sales strategies to meet the growing and changing needs of consumers.
2.4.3 The production process continues to improve, and the launch of new products and formulas accelerates. At present, people's dietary requirements have changed from eating full to good health, from single to diversified, and nutritious and convenient diet will become the goal pursued by consumers. Changes in eating habits require companies in the industry to continuously improve production processes, strengthen R&D investment, continuously launch new products and new formulas, meet and guide consumers' multi-level needs, and accelerate the process from R&D to market. Keep improving and respond quickly to consumer needs will become the market trend.

2.4.4 Chaining of the catering industry drives customized demand in the condiment industry. Chaining is an important trend in the development of the catering industry. Chain operation can not only improve efficiency and reduce costs, but also help catering companies to better manage. At the same time, the demand for product standardization, food safety and taste stability of large chain catering companies has also promoted the development of the seasoning industry. Especially for chain catering companies with certain flavor characteristics, the uniform and stable food taste is Important conditions for its rapid expansion. For the compound seasoning industry, manufacturers with strong taste reduction capabilities, product development capabilities and product standardization capabilities will have greater competitive advantages[7].

3. Aspects to be improved
As the condiment market grows year by year, some irresponsible businesses make huge profits through counterfeiting or using substandard raw materials, causing serious damage to the market.

3.1 Raw material issues
Nowadays, some compound seasonings are processed using livestock and agricultural products as raw materials. Some livestock and agricultural products contain excessive levels of veterinary drugs or pesticides, which lead to unqualified testing after being made into condiments. This problem cannot be avoided at present[8], my country's corresponding drug testing methods and minimum residue guidelines are still not standardized. Current testing methods and guidelines still remain on routine testing, such as the total number of colonies, aflatoxins, heavy metals, and some corresponding food additives and their content. Therefore, when buying seasonings, you must choose the source of raw materials with a guaranteed source and with a larger brand; the seasoning manufacturer must strictly control the raw materials, and the raw materials entering the factory must ensure that the various inspection reports are complete.

3.2 Problems with the use of additives
Some seasonings use pigments, preservatives and even chemical methods to process seasonings, which has a bad influence on the market. For example, blending soy sauce with very low cost, long-term consumption will cause great harm to human health. The use of pigments to conceal the color of low-quality raw materials; the abuse of preservatives to extend the shelf life of the product has made the condiment market mixed and seriously disrupted the market order[9].

3.3 Processing hygiene issues
Some condiment factories in our country have poor processing conditions and outdated equipment. Poor sanitary conditions make the product quality low, and even the production license and other procedures are incomplete. The supervision and rectification of the regulatory authorities are urgently needed.

3.4 Processing technology issues
The immaturity of the technology mainly focuses on the processing of high-concentration and high-efficiency condiments, the processing of compound condiments and the processing technology of pure natural condiments. The problem in this area in my country is more serious, manifested in the slow technological update speed, low production efficiency, high energy consumption, the loss of
craftsmanship, and the staleness of condiments caused by the simplification of product styles. Condiments in developed countries have achieved a high degree of automation management and computer-controlled processing processes, and various signs indicate that the processing technology of condiments in my country needs to be improved[10].

4. Countermeasures and suggestions
Use the HACCP system for management and monitoring The HACCP system is a hazard analysis and critical control point, and it is the most authoritative food safety quality control system in the international food industry today. The main function of the HACCP system is to maintain the quality of the food processing process and avoid interference from various microorganisms, external environmental pressure, and molecules. Using the HACCP system can remove some hidden quality hazards in the processing of condiments and reduce the workload of re-inspection after processing. The working method of the HACCP system is to ensure the quality of processed condiments through the control of microorganisms and bacteria. Compared with the inherent microbiological inspection, it is safer, more effective and of higher quality. There are many key control points in the condiment processing link, and it is far from enough to rely on experience and techniques. The HACCP system can effectively assist the condiment processing and play a comprehensive role in guaranteeing.

4.1 Innovation and promotion of process
Only when companies continue to innovate and produce products that meet the needs of the public will they not be eliminated by the market. This is very obvious in the food industry. At the end of the last century, there was only the term "soy sauce". With the development of the times, soy sauce and dark soy sauce have gradually emerged. So far, the types and functions of soy sauce have been varied. The different content of amino acid nitrogen creates different qualities, and consumers can choose reasonably according to their needs. Therefore, by changing the processing technology in the condiment processing link, a more popular healthy condiment is created. Condiment companies in my country can exchange and learn more with foreign companies, learn advanced management concepts and processing techniques, and jointly explore the future market trends of condiments; talents can also be introduced, and the government should provide policy and financial support to improve the processing of condiments to a higher stage.

4.2 Condiment processing issues
In condiments, chicken powder, beef powder and other seasonings are prone to agglomeration and excessive coliform bacteria. This problem needs to be improved. First of all, ensure the safety and sanitation of the production equipment and workshop environment. The production utensils must be disinfected with 75% edible alcohol before use. The input of raw materials is accurate to gram or less to ensure the taste; spices are sensitive to microorganisms, and pollution should be strictly prevented. If pollution occurs, it should be treated in time; the environment and equipment in the production workshop should be sterilized and inspected regularly; personnel entering and exiting should manage personal hygiene and wear uniformly equipped work clothes; after the raw materials are mixed, the high temperature treatment should be carried out after 2-4 minutes Powder throwing operation, powder throwing helps the mixing of raw materials, while reducing moisture and reducing the occurrence of agglomeration[11].

4.3 Improve the national standards for condiments
The current condiment market is developing rapidly, and some national standards and regulations have been unable to keep up with market changes. The market management department should strengthen close cooperation with the supervision department and update the corresponding national standards and regulations in a timely manner. Timely supervision for areas that have no laws and regulations; at the same time, it can also call on condiment processing enterprises to learn from outstanding enterprises, and take multiple measures to ensure the prosperity and stable development of the condiment market.
5. Discussion
Due to the wide variety of Chinese dishes and the large demand for condiments, the current condiment market still has great potential for development. And compared with European and American countries, there is still a gap in production technology, so there will be huge room for the development of condiments in my country in the future.

6. Conclusion
Demonstration of the real and problems in the current development of condiments in our country will help condiment companies discover and correct problems in a timely manner. Regulatory agencies actively discover current law enforcement loopholes, and the country is motivated to update relevant laws and regulations in a timely manner to adapt to market development. The improvement of these problems is of great significance to the healthy and stable development of consumers and even the market.

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