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Prepared By: FAS China Staff

Approved By: Emily Scott

Report Highlights:

FAS China attended the annual China Pea Conference and Plant-Based Congress, which was held in Shanghai, July 2024. This report provides the U.S. pea growers, exporters, and practitioners with pertinent updates on trade, challenges, and trends in peas, pea protein, and plant-based alternative products, as gathered intel from the conference. Please note that USDA does not officially endorse or support the accuracy of unofficial quantitative data taken from the presentations and/or discussions.

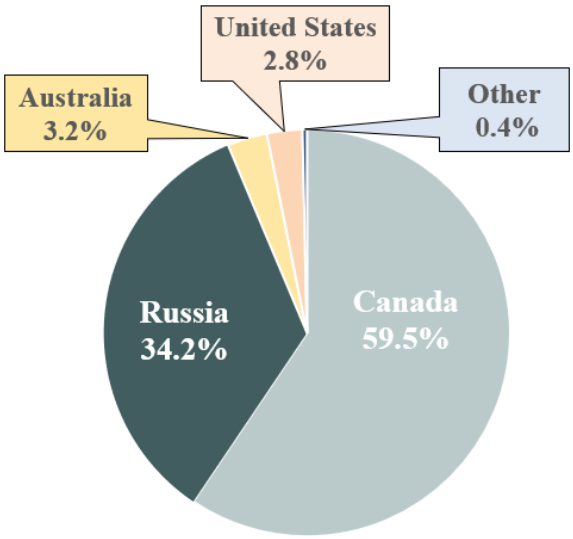
The Conference Overview

The annual China Pea Conference and Plant-Based Congress was held in Shanghai July 8-to 9, 2024. Organized by the China Chamber of Commerce of Import/Export of Foodstuffs, Native Produce, and Animal By-products (CFNA), the conference is regarded as the most influential and important conference for peas as well as plant-based alternative products. The conference focused on the China pea trade including the current market status, challenges, as well as pea protein trends and processing challenges. Also included were updates for plant-based alternative products. Keynote speakers included Chinese government officials, business leaders, and representatives from international agricultural associations.

China Pea Trade

Overview

China's demand for dry peas is high with insufficient domestic production; therefore, China is reliant on imports for its pea needs. Being the world's largest pea importer, China imported 2.6 million tons of peas in 2023, an increase of 64 percent compared to the year prior. Canada, the largest pea supplier to China, exported 1.6 million tons of peas last year. Russia has become the second pea supplier after gaining access to the China market in late 2022, exported 908,268 tons to China. Australia and the United States exported 84,247 tons and 74,820 tons of peas to China in 2023, respectively. This year, however, China's pea imports are decelerating; from January to June 2024, China imported 657,000 tons of peas, a 22 percent year-on-year decrease. Industry contacts explained the reasons for this decline as excessive stockpiles (led by a massive increase in imports in 2023), exchange rate fluctuations, increase in sea transportation costs, and trade policy uncertainties.



China's Pea Imports by Partner Country, 2023 (in tons)

Partner	Value	Market Share
Canada	1,579,158	59.5%
Russia	908,268	34.2%
Australia	84,247	3.2%
United States	74,820	2.8%
Other	9,487	0.4%

**Source: Trade Data Monitor*

Experts at the conference mentioned several important aspects when talking about the main issues affecting China's pea trade, including:

a) Volatile prices. Pea prices are mainly affected by factors such as production (i.e. supply) and weather, of course. But also noted was discussion of the India market and recent (significant) increases in India's pulse imports (up 90 percent year-on-year) and resulting impact on global supplies.

b) Anti-dumping and countervailing duty investigation conducted by the United States and Canada and any resulting reactions.

c) Global demand increases as the number of pea-importing countries expands.

c) The number of pea-exporting countries expands (i.e. Russia).

d) Slowing growth of plant-based alternative products affecting the consumer market for pea protein.

U.S. Pea Exports to China

China is the largest buyer for U.S. peas, particularly green peas which are favored by Chinese importers and food processors for their premium quality. Last year, the US exported $20 USD million worth of green peas to China. Despite U.S. green peas being $100-200/MT more expensive than Canadian green peas, Chinese importers and food processors are willing to pay the higher price, again due to the perceived quality differences. The U.S. peas bound for China are primarily used in snack foods, bakery products, pre-prepared foods, HRI sectors, and pet food products.

During the conference, FAS China heard from many importers and processors that there is a strong interest in U.S. green peas. For instance, in the snack food sector strict production standards cause China

manufacturers to be highly selective on the green peas' quality. The high quality and color consistency of U.S. green peas make them very popular in this industry.

The pet food sector also has a substantial demand for U.S. green peas, particularly as feed for China's racing pigeons. Pigeon feed producers emphasized that high-quality U.S. green peas have become a staple food for racing pigeons because of the better size, higher palatability, and ease of swallowing. Bird owners believe that feeding racing pigeons a diet that includes green peas can enhance their performance in competitions. Pigeon feed producers tend to opt for U.S. green peas to keep consumers satisfied, even if the price is considerably higher than other suppliers. According to the industry experts, demand for pigeon feed is expected to be the largest driver of green pea demand in the future with China's annual demand for pigeon feed estimated to reach 3.5 million tons of which green peas will account for 20-40 percent.

Pea Protein

General

During the early stages of plant-based meat development in China (approximately 2020), soy protein was the primary raw material due to its high protein content and the mature processing technology. At that time, pea protein processing technology was still underdeveloped and too costly to pursue as a meat substitute. For example, the cost of soy protein and wheat protein was around 8,000 RMB or about $1,143 USD/ton, whereas pea protein cost approximately 20,000 RMB or $2,857 USD/ton. As a result, soy protein and wheat protein took first position in China's plant-based meat products, where they continue to be in demand today.

Pea protein, on the other hand, found its primary applications in the food processing industry such as vermicelli, pea starch, snacks, pea paste, baiju liquor (as a fermentation starter), frozen/canned peas, feed, nutrition supplements, dairy alternatives, and pet products. Additionally, pea proteins have advantages including being allergen-free and non-GMO. However, as processing costs remain high, it is still not yet a substitute in plant-based protein.

Processing and Manufacturing

Pea processing in China began approximately three hundred years ago, initially focusing on starch extraction and the production of local snacks like vermicelli and *liangfen* (cold jelly noodles). In the 1980s, some vermicelli factories in Yantai of Shandong Province began extracting proteins from peas and repurposing the by-products into animal feed. Around 2006, some Yantai manufacturers started further processing pea protein and pea fiber into food ingredients, gradually expanding production and beginning large-scale manufacturing for food applications.

Vermicelli is one of the most common traditional foods in China, typically made from potato, beans and peas, or various grain starches. Due to the decreasing area of pulse cultivation in China, domestic peas are no longer sufficient to meet the demand for vermicelli production. As a result, Chinese vermicelli manufacturers rely heavily on imported peas as raw materials. In 2022, China's national vermicelli production reached approximately 1.41 million tons with 46 percent of this production concentrated in Zhaoyuan city of Yantai, Shandong Province. This is the main production area for Longkou vermicelli, where peas are the primary raw material. China has more than 300 vermicelli manufacturers, about 100 of which are located in Shandong Province, primarily in Zhaoyuan city. While most of the vermicelli produced is consumed domestically, Shandong Province plays a significant role in exports due to its large number of vermicelli manufacturers.

Longkou vermicelli made from green peas

Each year, China exports about 100,000 tons of vermicelli, with roughly 70 percent of these exports coming from Shandong Province. China's large consumer base and market for vermicelli products are expected to continue to grow, with significant development opportunities arising as technology and equipment are continuously upgraded.

Speakers from vermicelli manufacturers of Zhaoyuan city discussed the challenges facing protein processing with the most significant issue being the unstable pea supply. This instability is due to the limited area of pea cultivation and the unpredictability of production. For instance, the drought in north America in 2021 caused a sharp decline in pea production, leading to higher prices and financial losses for pea processors in China.

Another major challenge is expanding the usage of pea protein while reducing costs. Specifically, peas contain 20-26 percent protein and more than 50 percent starch, with pea starch being rich in 30-75 percent amylose. These characteristics currently limits peas' wider application in the China-based Asian foods market. Due to the lack of broader applications, the demand for pea starch remains restricted. Consequently, unless significant new applications for pea starch emerge, its limited demand will constrain further processing of peas and resulting overall supply of pea protein.

Consumption dynamics

The demand for pea protein in China is primarily driven by several factors including the strong demand for nutritional health products including pea protein as a dairy substitute and China's expanding pet and animal supply/food market.

As China's younger generation's interest in healthy eating continues to grow and the concept of a low-carbon, healthy lifestyle becomes more ingrained, the market for pea protein is expected to expand significantly. This growth is driven by increased research investments focused on human health and environmental sustainability. Additionally, the prevalence of lactose intolerance is closely related to ethnicity, with East Asians being 40 times more likely to be affected compared to Western populations. Medical statistics indicate that over 80 percent of Chinese people exhibit symptoms of lactose intolerance with this number on the rise. As a result, there is a growing demand for plant-based dairy alternatives which are also valued for their nutritional benefits, allergen-free properties, and low cholesterol content. Among these alternatives, pea protein stands out as one of the most efficient plant-based ingredients. Plant-based protein drinks, such as pea milk or oat milk, are becoming increasingly popular. Pea protein's excellent emulsification properties make it suitable for use in these beverages. With its high protein content, pea milk provides a substantial source of protein. For individuals with lactose intolerance, pea-based protein beverages serve as a viable substitute for cow's milk, helping to meet their protein needs. Many domestic companies in China have started to introduce pea-based beverages as replacements for traditional dairy and soymilk products. Although these companies are not yet operating on a large scale, industry experts agree that pea-based dairy alternatives have significant growth potential.

Also, the rapid growth of the China pet market has led to a significant increase in the demand for pet foods and products. Peas are an important ingredient in pet foods and products aside from racing pigeons. Peas serve as a valuable source of protein in pet foods, with their allergen-free nature augmenting their suitability for a wide range of applications in functional pet foods. Additionally, peas are an important ingredient in pet snacks. Pea fiber, used in cat litter, is known for its strong water absorption and low risk if ingested accidentally by cats, making it a valuable natural raw material. Currently, pea fiber is one of the most important and highest-quality raw materials for producing tofu cat litter, comprising about 40 percent of the product. This suggests that pea fiber has significant potential for growth and development in the cat litter industry.

Finally, the use of pea protein as a substitute for soy protein in swine feed may reduce feed costs. At the Congress, an international consulting firm shared a sample experiment where pea protein isolate was used to replace soy protein in swine feed. The results showed no significant differences in the growth rates and illness rates of swine fed with either of the two protein sources. However, the feed with pea protein was less expensive, thereby improving the economic efficiency of the pig farms.

Competition in the pea protein market is expected to intensify in the future, with a trend towards the stronger companies growing more dominant while weaker ones are phased out. Only larger companies are likely to have the resources to survive and thrive in this increasingly competitive environment.

Plant-Based Alternative Products

Market Status and Challenges

On December 25, 2020, the Chinese Institute of Food Science and Technology (CIFST) issued the voluntary group standard Plant-Based Meat Products (T/CIFST 001-2020), which provides definitions,

technical requirements, and guidelines on the labeling, packaging, transportation, and storage of plant-based meat alternative products. The standard has been implemented on June 25, 2021. Unofficial translation of the standard is available in the GAIN report CH2021-0052.

After the rapid growth during the period from 2019 to 2022, the popularity of plant-based alternative products in China market has cooled and entered a relatively stable period of rational development. Many start-up companies have disappeared or shifted their focus from plant-based meat to other products. The overall development mode and direction of the industry have also become the focus of industry concern. Experts from the China Plant-Based Foods Association explained that the main reasons for the slowdown in the development plant-based alternative products include the retreat of investment, product homogenization and lack of innovation, product over-processing (i.e. too many additives), non-competitive high prices (as compared to real meat), texture compatibility, and consumers' spending habits becoming increasingly conservative because of the economic downturn.

The main channels for plant-based alternative products are through both online and offline retail channels and restaurants. While many consumers are willing to taste a plant-based alternative products, due to some of the challenges mentioned above many fail to make additional purchases. Industry insiders pronounced that there are too few application scenarios for a meat-substitute product in China, including at restaurant chains or as snacks. Product forms are currently limited to meat patties, minced meat, meatballs and other post-processing forms with a limited range and specific uses. Moreover, consumers are also accustomed to defining plant-based meat as a snack or side dish rather than a food or ingredient. This is far from the future meat that the industry players have envisioned as an alternative to traditional meat.

Despite the challenges the industry is facing, the plant-based industry is likely to remain in the market because of its staying perception as a healthier and more environmentally friendly product. Industry insiders are still confident in plant-based alternative products. A contact revealed that the industry is still in its early stages in China and is an emerging industry with new concept products and will take time to establish itself.

Trends

The leaders of participating plant-based companies discussed the future direction of their products and concluded that several key strategies would drive growth. They emphasized the importance of increasing consumer awareness through market activities, including helping people gain a better understanding of plant-based alternative products and the environmental benefits of a plant-based lifestyle. They also highlighted the need to integrate offline experiences with online purchases, expanding beyond traditional restaurants into school cafeterias and airline meals, and regularly gather user feedback to optimize products and experiences. To cater to regional taste preferences, they plan to diversify product offerings and enhance taste and flavor. Additionally, advancements in technology have allowed these companies to improve the taste and texture of plant-based alternative products, making them more similar to real meat, while also reducing costs.

Attachments:

No Attachments.