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& China Agricultural University

The Development of Organic Industry and Organic Product Certification **in China** (Excerpt)

Organic and Beyond
Excerpted, Compiled and Translated by OABC Organic Agricultural Technology Center
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Foreword

Over two decades, China's organic industry has transformed itself in stages from disorderly to orderly development, from conscious development to being advocated by the whole society, and from civilian activities to being encouraged and guided by the government. Organic product standards, relevant laws and regulations have been promulgated and implemented in China and rigorous monitoring been conducted on the links of organic agricultural production, certification and trade. Consequently, the organic industry in China has been on the track of rapid development featuring standardization and legalization.

This book, titled ***The Development of Organic Industry and Organic Product Certification in China(2015)***, is compiled by Certification and Accreditation Administration of the People's Republic of China (CNCA) and China Agricultural University. It describes the development of China's organic industry in 2014, organic production and processing and their regional distribution and development trend, production of China's imported and exported organic products, China's organic product trade, organic product quality analysis and analysis of development potential of the industry, summarizes and analyzes in a detailed manner the achievements and shortcomings of the development of the industry in 2014, and sums up systematic conclusions of the overall development of the industry.

We would like to appreciate the "Research and Demonstration of Key Certification Technologies for Regional Competitive and Characteristic Organic Products" and "Research on Key Technologies of Allowable Substance Evaluation in Organic Production", two national key technology research and development programs to financially support us in compiling and publishing of this book.

Due to language barriers, the development of China's organic products is less known by the organic community in the world. Beijing Organic and Beyond Corporation (OABC) has undertaken the tasks of translating, printing and disseminating the development of China's organic agriculture for years, helping organic practitioners in the world acquire the information about China's organic industry. The long-term devotion of OABC to the public is most valuable. Thus, we would like to extend our sincere gratitude to OABC and all of its personnel who have involved in the editing, translating, compiling, printing and distributing of this book.

However, there are fewer organizations that get engaged in organic industry research in China, with limited sources for information collection and time constraints, it seems difficult for us to accurately analyze and summarize China's organic industry. It is sincerely hoped that experts and fellows could point out and correct errors or omissions existing in this book, if any.

Deputy Director

Certification and Accreditation Administration of the People's Republic of China (CNCA)

Beijing, July 10, 2016

Types and distribution of certificates on different organic products from China in 2014

	Chinese standards*	Foreign standards
Certified enterprises	8,792(66)	1,198
Organic planting area (thousand hectares)	1,124(265)	801
Organic planting yield (thousand tons)	6,903(965)	3,263
Wild collection (thousand hectares)	822	328
Wild collection product yield (thousand tons)	613	157
Total output of livestock and poultry products (thousand tons)	1,058	107
Total output of aquatic products (thousand tons)	294	3
Processed product yield (thousand tons)	2,573	2,276
Filing number of organic labels (billion)	1.056	--
Verification of organic products (thousand tons)	432	--
Estimated organic product sales (billion yuan)	30.2	
Export trade volume of organic products (thousand tons)	--	284.7
Export trade amount of organic products (billion USD)	--	0.586

* Data in brackets are overseas certification based on Chinese standards for organic products

Organic Agriculture in China 2014:Summary

Key data on organic agriculture

Up to the end of 2014, there have been 8,792 manufacturers who obtained11,499 organic product certificates with Chinese standards, distributed in 23 provinces, 5 autonomous regions, 4 municipalities and 2 special administrative regions in China. In 2014, 10 certification bodies from 21 countries carried out overseas Chinese standard certification, which issued 121 organic certificates and certified 66 companies. In the same year, the number of Chinese manufacturers complied with foreign standards for production and certification was up to 1,198, that of the production bases was up to 1,037, and the processed plants for organic products was up to 698 .

Generally, the production area of organic plants was 1.945 million hectares in accordance with Chinese standards, of which the total area of organic farming was 1.124 million hectares, and the total area of wild collection was 822 thousand hectares. The total output of organic plant products was 7.516 million tons, of which the output of organic certified products was 6.903 million tons, and the output of wild collection was 613 thousand tons. Regarding to the production of organic products in accordance with Chinese standards, the top five provinces with largest organic crop planting areas in China was Heilongjiang (220 thousand hectares), Inner Mongolia (142 thousand hectares), Guizhou (108 thousand hectares), Liaoning (102 thousand hectares), and Xinjiang (74 thousand hectares). And the main regions for wild collection of organic products were northeast and northwest of China, of which the top five provinces were Heilongjiang (281 thousand hectares), Jilin (84 thousand hectares), Qinghai (67 thousand hectares), Inner Mongolia (61 thousand hectares) and Zhejiang (28 thousand hectares). There were a few areas for wild collection in eastern coastal regions.

In 2014, the main kinds of organic farming livestock raised in accordance with Chinese standards for the production of organic products were sheep, cattle, and pig, of which the number of organic sheep was around 4.14 million, that of organic cattle was nearly 1.15 million, and organic pigs was 160 thousand. In the aspect of output, the total output of organic livestock and relevant products in 2014 was 1.056 million tons, and the total output of organic livestock production was 263 thousand tons, of which the organic sheep yield was 130 thousand tons, the organic cattle yield was 113 thousand tons and the organic pig yield was 14 thousand tons. In addition, there were other livestock production including horses, donkeys and deer, but with small proportion. In poultry production, 1.43 million organic chickens (including broilers and layers) were totally raised in 2014, taking a dominant position in the organic poultry production. In 2014, the total yield of animal products was 793 thousand tons, of which organic milk was the main product with an output of 784 thousand tons, accounting for 99.0% of the total yield; organic egg yield was 3.8 thousand tons, accounting for 0.5% of the total yield.

In 2014, the total output of aquatic products was 294 thousand tons, of which aquatic plants yield was 187 thousand tons (mainly including the production of kelp and laver), accounting for 63.7% of total output of certified aquatic products; it was followed by fresh fishes (freshwater fishes and marine fishes) with an output of 71 thousand tons, accounting for 24.0%, of which 97.4% were freshwater fishes. Moreover, the yield of crustacean and invertebrate products was 36 thousand tons, accounting for 12.2%. The yield of aquatic vertebrate product (turtles) was 561 tons, with a very small proportion of 0.2%. In 2014, the total output of organic processed products was 2.284 million tons.

Among the organic processed products, the grain milling had the highest yield of 953 thousand tons, accounting for 41.7% of the total output, mainly including rice (rice flour) and wheat flour; the yield of processed liquid milk or cream ranked the second with an output of 451 thousand

tons, accounting for 19.8%; and the yield of processed feed ranked the third with an output of 244 thousand tons, accounting for 10.7%. The yield of previous three types of processed products accounted for 72.2% of the total output of processed products. The yield of by-products of vegetable oil processing, pasta and other grain products, white wine, vegetable oil processing and processed or preserved by vegetables was 50 to 100 thousand tons, with the proportion between 2.2% and 4.1%; and the yield of fruit and vegetable juices, starch and starch products, meat and its processed by-products was less than 50 thousand tons, with a proportion less than 2.00%.

In 2014, 10 certification bodies issued 121 organic product certificates to 66 companies in 21 foreign countries. Italy received the largest number of certificates, followed by Spain, Austria, Denmark, Australia, the USA, New Zealand, Germany and Thailand. The total area abroad for certificated Chinese organic products was 265 thousand hectares, mainly distributed in Turkey, Denmark, Brazil, Italy and Spain; there were 52 types of organic products certified abroad including 28 types of processed products. The total output of organic products produced abroad was 965 thousand tons, of which milk yield was 683 thousand tons, accounting for 70.8% of the total output, and the yield of other processed products was 143 thousand tons, mainly including wine, vegetable oils and condiments. In 2014, the main products certified according to foreign standards of organic products were plant products, livestock and poultry products, processed products and aquatic products. The total area of certified organic farming was 1.1138 million hectares, of which the area of certified organic planting was 800.7 thousand hectares, and that of wild collection was 328.4 thousand hectares. In 2014, the total output of organic certified plants, processed products, animal products and aquatic products was 3.3586 million tons (58.47%), 2.2754 million tons (39.62%), 107.2 thousand tons (1.87%), and 2.5 thousand tons (0.04%) respectively.

The total output value of all organic products was 116.4 billion yuan in 2014. The output value of processed products was 75 billion yuan, accounting for 64.4% of the total value, of which the output value of processed liquid milk and cream was up to 28 billion yuan. Moreover, the output value of cereals and grains was 8.5 billion yuan, accounting for 7.3%; it was followed by fruit and nuts with a value of 7.6 billion yuan, accounting for 6.5%. The value of previous three products accounted for 78.3% of total value.

1.056 billion organic labels were filed in 2014, of which 727 million were for milk, 36 million for liquor, 28 million for yogurt, 20 million for rice, and 13 million for vegetables and wine. Regionally, Inner Mongolia filed the most labels of 455 million, followed by Guizhou of 35 million, Heilongjiang of 30 million, Shandong of 26 million, and Guangdong of 17 million. Among 23 organic certification bodies, the top five in number of organic product filing were COFCC, OFDC, WIT Assessment, CHTC and FOFCC.

The total verification for organic products with label issued were 432 thousand tons, including 354 thousand tons of processed products, accounting for 81.9%, followed by 73 thousand tons of plant products, accounting for 16.8%, 4 thousand tons of aquatic products, and 1 thousand tons of animal products. The sales of organic products was estimated in accordance with the number of label issued and the current price of organic products. In 2014, the sales of organic products were 30.2 billion yuan, of which 28.37 billion yuan was from organic processed products, accounting for 93.7% of the total sales. And it was followed by plant products at 1.62 billion yuan, accounting for 5.4%; the sales of aquatic products and animal products were 240 million yuan and 40 million yuan respectively. Only the sales of eggs were included in the statistics of livestock and poultry products, while the meat of livestock and poultry products was included in the statistics of processed products.

In 2014, the export trade amount of organic products from China was 586 million dollars, with a total trade volume of 284.7 thousand tons. In the aspect of trade amount, the processed products had the highest trade value of 403 million dollars, accounting for 68.83% of the total. And it was

followed by the primary agricultural products of 173 million dollars (29.48%), wild collection products of $7.7147 million (1.32%) and animal products of $ 2.1914 million (0.37%). In the aspect of trade volume, the trade of primary agricultural products ranked the first, with 135.3 thousand tons, accounting for 47.58% of the total, and followed by processed products with 119.1 thousand tons (41.76%), wild collection products with 29.9 thousand tons (10.51%) and animal products with 400 tons (0.14%).

General information of special supervision on organic products in 2014

The supervision and sampling inspection work of 2014 was carried out from August to November in 2014, lasting for four months. And 319 batches of products were randomly inspected in circulation (including online distribution) and production processes, of which 305 batches had effective and authentic certifications, with a certification conformance at 95.6%; 273 batches of organic certified products were tested by a total of 516 testing items, and the qualified batches were 270, unqualified were 3 batches of tea product. Overall, the average pass rate of certified organic products was 98.9%. During supervision and sampling inspection, 10 illegal cases were investigated including organic codes missing, expiration of certificates, and abuse of certification mark beyond scope. Overall, the use of expired certificates in circulation was a dominant problem, and the certification level on the quality and safety of organic products was more reliable.

In 2014, organic products sold on online platform were sampled for the first time. And it mainly focused on the quality of organic products sold on online platform. The shopping sites sampled included No. 1 store, Shanghai Oriental TV shopping Co., Ltd., Tmall, Taobao and others, and the products sampled were 13 batches, including 3 batches of organic vegetable oil, 7 batches of organic tea and 3 batches of organic juice. Among these products, 3 batches failed to meet the requirements on the authenticity of product certificate, 2 certificates of which were expired and 1 batch products were not labeled with organic label. It can be seen that the authenticity conformance on organic products sold via network is 76.9%, which was lower than that of the regular sale channels; in addition, 10 batches of inspected products were qualified.

In 2014, the cereal products were tested for GMO (genetically modified organisms) ingredients for the first time, and 89 batches of products were sampled totally, 73 batches were tested on CaMV358, NOS gene, and BT gene (rice), all without detectable transgenosis.

Analysis on the development potential of organic industry in China

Analysis on the production potential of domestic organic products

In 2013, the average proportion of regular produced organic cereals was 0.4% globally, while the ratio in China was 0.5%, which was slightly higher than the global average level. But the ratio in Austria and Italy reached 12% and 6.1% respectively. Therefore, it can be concluded that the organic cereals production in China still has potential for development.

For vegetable production, only 0.2% vegetables in China were organic vegetables and the its global average proportion was at 0.4%. But that proportion in Denmark, Austria and Germany reached 21.8%, 16.5% and above 10% respectively. China is one of the largest producers for vegetables, accounting for about half of the global vegetable production area and yield. Although it will be difficult in converting the vegetable production into organic production technically, there still exists great potential on the production of organic vegetables in China, especially in peri-urban areas. If the technology investment increased, there could be a huge market space to meet as such demanding are increasing.

Globally, the proportion of organic fruits and nuts to the conventional production was much higher than the proportion of other organic products. The global average proportion of organic fruits

was 3.7%, while in China it was 1.2%. France, Spain and Italy had larger areas for organic grape production, reaching 8.0% to 8.5% each. The United States, Poland and other countries had larger areas for organic apple and pear production, with the proportion at 3% - 6%. These fruits mentioned above are also the main fruit types planted in China. If the technological input increases on this regard, China will have great development potential in organic fruit production.

The proportion of planting area of organic beans and oil crops in the production area of ordinary beans and oil crops in China was 1.5%, which was significantly higher than the global average proportion of 0.4 %. But that proportion in Denmark and Austria reached 40% - 58%, which means that the production of organic beans and oil crops in China still has a huge potential for improvement. Organic Tea was a superior organic product in China, the proportion of which in conventional production accounted for 2.9%, significantly higher than that of other crops. Furthermore, most of our tea production areas were in the mountains, which tea production could benefit from the geographical position and climatic condition, and it still has a big potential for development.

Development potential of exported organic products in China

In 2014, the total export trade amount of organic products in China was 585 million dollars, and the total trade volume was 284.4 thousand tons. Among the exported organic products of China over the years, bean products and oil crops had the biggest export ratio, about 100 thousand tons and 70 million dollars every year, accounting for 43.8% -62.7% of the total trade volume. The by-products of vegetable oil processing, the primary agricultural commodities including the vegetables and cereals processed and stored had an export volume of more than 10 thousand tons every year. As for the processed feed, grain milling products, fruits and nuts processed and stored, vegetables, fruits and nuts, plant oils, fruit and vegetable juices as well as Chinese herbal medicine, their export volumes were smaller, only from 1,000 to 9,000 tons. While the export of animal products, textiles, aquatic products and starch products had the smallest volume at 1,000 tons or less.

According to the analysis above, currently, China has a lower proportion of organic products in the ordinary products, and still has some potential for the development of Chinese and export markets. Although there are many challenges ahead, the development prospect of global organic food industry is encouraging, and the Chinese market will have a positive growth for a certain time.

Development of Domestic and International Organic Industry

"No. 1 Document" issued by China Central Government in 2013 and 2014 clearly put forward the policy on improving rural ecological civilization construction and sustainable development, and proposed the promotion of eco-friendly agricultural development and ecological protection construction, to establish a long-term mechanism for sustainable development of agriculture. China has issued a number of policy papers to promote the development of organic industry, reflecting its high attention on ecological civilization construction and sustainable agricultural development, as well as its substantial policy support for the development of organic industry. Local governments also attached great importance to the development of organic industry. At present, many provincial governments in China combine the developing organic industry with protecting rural ecological environment, developing rural recycling economy, solving the three problems through the Green Barrier and building new socialistic countryside, introducing development planning for organic industry and a series of incentive policies and providing subsidies for organic product development, which assist agricultural enterprises, rural cooperatives as well as the farmers to establish organic production systems and greatly increase their motivation for organic production.

The latest trends of domestic organic industry

To positively respond to the requirement proposed in the 12th Five-Year Plan on national economic development of "building a resource-conserving and environment-friendly society with green development", domestic organic industries carry out a series of activities to promote the development of organic production, which mainly include: the "organic publicity week" held by CNCA in September 2014 to take most advantage of certification and accreditation; official implementation of the new version of Administrative measures of Organic Product Certification; "demonstration of organic product certification" organized since 2011 along with organization and introduction of "research and demonstration of key techniques in the certification of organic product with regional specialties", one of the National Sci-Tech Support Plan projects for the 12th Five-Year Plan.

The issue and implementation of new version of *Administration of Organic Product Certification*

On November 15, 2013, the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (hereinafter referred to as AQSIQ) issued the Administrative Measures of Organic Product Certification Administrative measures of organic product certification (AQSIQ Decree 155). This decree was officially implemented on the date of April 1, 2014. Compared with the former version of 2004, the main revisions fall in the following aspects:

1) Unify the certification scope by establishing Catalog System of Organic Product Certification. CNCA published Catalog of Organic Product Certification and Supplement Catalog\ of Organic Product Certification in turn, which stipulated that only the organic products listed in the Catalog could get certified.

2) Establish the system of organic code and certificate number, and unify the certificate document and certification marks; establish the "one product one code" management system of the 17-digit organic code, which have to be found on the smallest sales package of certified products; establish a unified numbering system of certificates and require all certification authorities to issue the certificate with the number generated from this system. All the organic codes and certificate numbers can be inquired on CNCA website, making it easy for consumers to verify the authenticity of organic products.

3) Cancel the certification mark of organic conversion. However, the certification of organic conversion still exists. Before certified as organic, the products need a conversion period of 2-3 years, during which the products can only be sold as conventional.

4) Establish the selling license system of certified organic products to prevent selling beyond the permitted scope. To ensure that the types, scope and numbers of organic products sold by certification clients conform to the contents in their certificates, it is required the certification authorities to issue a selling license to set up the selling scope.

5) Regulate the supervision on imported organic products to protect the domestic market. Establish the entry verification system of imported organic products, which is beneficial for the protection of the legitimate rights and interests of domestic consumers as well as the healthy development of the domestic market for organic products. To ensure the effective implementation of the new version of Administrative Measures of Organic Product Certification in import regulations, CNCA formulated the Entry Inspection Guide for Imported Organic Products, and requested all departments of entry-exit inspection and quarantine to follow it.

6) Increase penalties and establish the elimination mechanism to eliminate unqualified enterprises. The new version of Administrative Measures of Organic Product Certification clearly defined the sanction bases and penalties details against the violations of certification authorities and clients, including forgery, faking, infringement, illegal transaction, assignment, alteration of certificates and so on. The new version of Administrative Measures of Organic Product Certification states that if certification clients provided false information for certification, illegally used prohibited substances, used organic certification mark beyond its scope, or had major accidents on quality and safety of their products, the certification authorities shall not accept their certification application in 5 years, with the companies, the production bases and processing sites all involved.

Carry out Organic Publicity Week

In order to achieve the task of the 18th National Congress of CCP in accelerating the development of modern agriculture, vigorously promoting the construction of ecological civilization, comprehensively implementing the certification system for organic products, popularizing organic knowledge to the public, and stimulating healthy development of organic industry, CNCA organized a series of activities in the yearly "Organic Publicity Week" in accordance with the overall plan of national "Quality Month". Its main activities include:

1) Publish a series of reports about the development of organic industry on media. Publish or broadcast a series of interview reports and feature programs about organic certification on newspapers, TVs, websites and other media, to systematic ally show the achievements in organic industry and demonstration area of organic certification.

2) Hold press conference of Development Report on Chinese Organic Industry publication and give away books about organic products certification. Publish Development Report on Chinese Organic Industry through both news media and websites; hand out Implementation Guide on Certification of Food and Agricultural Products, Quiz on Certification of Organic Products and other books in communities, supermarkets, companies, schools and other institutions; organize online reading activities, etc.

3) Prepare posters and bulletin board (window) about organic products certification. Organize people to hand out or put up the posters about organic product certification; prepare outdoor and indoor promotional bulletin board (window) for organic products in public spaces and office areas, to create a strong propaganda atmosphere.

4) Hold interactive activities for consumers enter the organic producing base. Organize activities for

consumers to visit the organic bases and experience organic farming, processing and consumption process on-site. Hand out organic promotional flyers to inform consumers of organic knowledge and how to identify certified organic products. Organize follow-up reports on media and create feature programs.

5) Hold online talk show of "My Organic Life". Invite relevant experts, consumers, organic certified personnel and organic product retailers to attend interactive online interview, preach the knowledge of organic products and organic certification system, and enhance the mutual trust of all parties involved.

6) Organize public service activities of "Organic Knowledge into the Community" and "Organic Knowledge into the Campus". Organize bureaus and certification authorities all over the country to hold public service activities of "Organic Knowledge into the Community", and promote the organic philosophy of life through hand-out of promotional flyers on organic certification, explanation & advice from experts, and lucky draw of organic products; send organic certification experts to school (kindergarten) to distribute the knowledge on organic certification and promote the philosophy of organic lifestyle and consumption knowledge. Screen propaganda films about organic certification in media and broadcast videos on the governmental and related websites.

7) Hold appointment ceremonies for volunteer supervisors of organic certification. Recruit citizens as volunteer supervisors of organic certification, and organize them to attend the activities of inspection and promotion actively to strengthen the social supervision.

8) Introduce new media platforms for organic certification. Establish new media platforms for public information of organic products, to provide demonstration windows for certification authorities of organic products, to offer consumers with services like inquiries of certificate marks for organic products, diffusion of organic knowledges, and consumption guides on organic products, to construct a platform for demonstration areas of organic certification to advertise local characteristic industry, which enable the public obtain credible and authoritative information about organic products and eliminate the bottlenecks in information asymmetry.

9) Regulate the market of organic products intensively. Combine local regulatory authorities with related departments to carry out activities of regulation and law enforcement of in organic certification, and expose a number of illegal cases about the certification of organic products. Response and handle public opinions in time and purify the market environment of organic products.

Continue with the construction of national organic product certification demonstration 2014

To maximize the role of certification and accreditation as "deliver trust and serve developments", improve the regulatory linkage mechanism for the certification of organic products, and make use of certification and accreditation means to promote local economic development and the healthy and steady development of China's organic industry, CNCA has carried out the work of "Construction of National Organic Product Certification Demonstration" since 2011. CNCA notified the local recommendation bureaus to continue supervising and assisting the demonstration areas in organic product certification, constantly improve the general quality work mechanism of "overall responsibility for local governments, individual duties for supervision departments, and enterprises as first responsible person", and perform well in the construction of national organic product certification demonstration. At the same time, all recommendation bureaus need to strengthen the supervision and inspection on the certification activities in demonstration areas constructed for organic products, and punish illegal or irregular certification scandals in demonstration areas. For those that cannot meet the qualification any more, the relevant county/municipal governments

should be urged for rectification and strengthening the management. If they still cannot meet the qualification afterwards, CNCA should be promptly reported to revoke the title of "Demonstration Area Constructed for Certification of Organic Products ".

Based on the recommendations from the local quality inspection departments, CNCA carried out the activities of document review, expert consultation and online publicity for the units and organizations applying for demonstration areas of organic product certification in 2014, and agreed to carry out the construction of national demonstration areas for organic product certification in nine cities and counties, including Kaihua county of Zhejiang, Xinfeng county of Jiangxi, Lingbao county of Henan, Fan county of Henan, Chibi city of Hubei, Liangzihu District of Hubei, Luhe county of Guangdong, Tongjiang county of Sichuan, Guinan country of Qinghai.

The launch of "research and demonstration of key techniques in the certification of organic products with regional specialty", a National Sci-Tech Support Plan Project of the 12th Five-Year Plan

"Research and demonstration of key techniques in the certification of organic products with regional specialty" is the fourth National Sci-Tech Support Plan project in the field of certification and accreditation. Based on the key points and technical difficulties in producing and processing organic products with regional specialty in domestic organic industry, this project focuses on the layout of the national "12th Five-Year Plan" and overall development deployment of certification and accreditation industry, developed innovative techniques for quantitative or semi-quantitative evaluation on the whole industry chain of organic products, and created techniques of ecological civilization evaluation with organic certification as the core. This project includes six subjects, with an implementation period of three years, and is expected to be completed in 2016.

This project will generate breakthroughs in three key technologies in organic industry, including evaluation analysis, risk warning and information tracking, establish a contrast model in product stability between organic processing and conventional processing, draw a national distribution map of advantage areas in organic production, for products like vegetables, tea and other products, and construct a support platform for evaluating the permitted substance in organic production. It is expected that 7 demonstrating model areas and 2 demonstration areas of maturity evaluation to be established, 12 national/industry standards to be created, 6 technical specifications to be set, 2 patents to be granted, 2 software systems to be developed, 4 books to be published, 1 software copyright to be issued, 18 research papers to be written, 15 research reports to be completed, 6 academic leaders to be trained, 2 innovation teams to be constructed, and 200 professionals to be educated.

Since the 18th National Congress of CCP clearly proposed to promote the construction of ecological civilization vigorously, it has drawn widespread concerns in the community as an important part of the "Five in One" principle in socialist construction. The construction of ecological civilization should be integrated into all aspects and the whole process of economic, political, cultural and social construction, with the index system concerning ecological civilization as the foundation. This project will explore the function of organic certification on ecological civilization and evaluate the application of the organic industry maturity in ecology civilization construction through researching key technologies of evaluation index for the process of organic industry development including resource recycling, ecology environment & value, and industry chain integrity. The implementation of this project has important significance in promoting the national construction of ecological civilization and the modernization of national governance system.

New development trend in Chinese organic industry

Chinese organic agriculture explores new technology and new development model for modern agriculture

With the rapid development of science and technology, new techniques such as biotechnology, new materials technology, and information technology is changing the quality and style of living rapidly, and influencing the development of agricultural industry significantly as well. The development of organic agriculture, technically based on the introduction of bio-fertilizer, pesticides and equipment, reserves and practices new technologies for the development of modern agriculture. With economic development, people pay more attention to ecological and social functions of agriculture while concerning its producing function. Moreover, organic agriculture is a new industrial development model/system based on the improvement of traditional and conventional agriculture with balanced ecological, environmental, economic and social benefits, which combines the production, management, distribution with consumption of ecological agriculture all together via organic product labeling, so it can play the leading role in the ecologicalization and environmentalization of conventional modern agriculture.

The constant expansion in development areas of domestic organic industry

Currently, most organic production in China are located in the eastern coastal and northeastern provinces. In recent two to three years, the western regions took advantage of the China Western Development policy and developed organic livestock, which has shown a good momentum of growth. From aspects of number and area, the three provinces of Northeast China rank the top; from the degree of product processing and quality control, Shanghai, Zhejiang, Shandong, Jiangsu and other eastern provinces as well as Beijing have more advantages, which are related to not only the local consumption level, the market demand and the advanced & innovative awareness of enterprises, but also the supportive policies of local governments. Moreover, the development of organic industry is also related to the production conditions, thus the organic agriculture in Yunnan, Guizhou, Xinjiang, Qinghai, Ningxia, Gansu and other western regions is expected to develop fast with the advantages in environment and resources, as well as the preferential by local governments. Among them, natural collections, products with regional specialty and land-intensive products have a clear comparative advantage compared with those produced in the eastern provinces. The rise of the organic industry in Guizhou recently is a good example of this trend. In addition, the eastern provinces will maintain the advantages in value chain, market, organic product processing, and the expanding international and domestic markets.

The market scale of organic products in China will continue growing

Before 2000, organic production in China was mainly based on the demands of the international market, and the products were basically exported to foreign countries. According to CNCA statistics, the GDP of organic products industry in China was 2.22 billion yuan in 2004, of which export value was 1.24 billion yuan. The main products included soybeans, tea, vegetables, cereals and so on, which were mainly exported to US, EU, Japan and Southeast Asian countries. The rest certified organic products with a value of nearly 1 billion yuan entered the domestic market, including vegetables, tea, rice, cereals, fruits, honey, herbs, aquatic products, and livestock and poultry products. By 2013, China's export amounts of organic products had reached approximately $ 500 million, while sales of organic products in the domestic market had grown to 20-30 billion yuan. Considering the continuously growing demands for organic products in both domestic and international markets, and the constantly strengthening of the national relegation & supervision as well as the support for organic industry, it can be expected that the sales of organic products in domestic and international markets will be increasing every year for a long period of time.

China continues strengthening the regulation and supervision in organic industry

The regulation system of organic industry consists of the standard system and the management system. The national standard of organic products is the general guide for normalizing and restricting organic production, processing, operation and certification, which is the fundamental criterion for the development of the organic industry. AQSIQ issued and implemented China's National Organic Standards, Organic Product (GB/T19630-2005) in 2005, and revised it in 2011. Based on the laws and regulations of People's Republic of China Certification and Accreditation Regulation, the national standards of Organic Product, Administrative Measures of Organic Product Certification and Implementation Rules of Organic Product Certification, CNCA integrated and optimized the existing management systems of organic production, processing, management, consultation and certification, unified requirements and methods for the certification of organic products in China, and strengthened the daily supervision and comprehensive quality control in organic industry, which provided a strong legal guarantee for the validity as well as the healthy and orderly development of organic product certification in China. Nowadays, the trust degree of domestic consumers in China's organic products keeps increasing, and the international reputation of organic products from China also improves continuously.

Organic Industry Development of China in 2014

Data sources, scopes and analysis principles

Data sources

Organic products are produced and processed based on the principles of organic agriculture and the methods and standards of organic production, and then certified and issued with certificates through legitimate certification authorities for organic products. The organic products discussed in this report are specifically referred to the products consumed by human and animals, which are produced, processed, traded and certified in line with the national standards of China and foreign countries for organic products.

The Information System of Food and Agricultural Products Certification in China (hereinafter referred to as the Information System)[1] developed by CNCA has been running officially since September 2006. Since then, this Information System has received extensive attention from the relevant departments, organizations and consumers as a platform for the national administrative departments of certification and accreditation to collect and publish the certification information of food and agricultural products. The relevant legal authorities, domestic and foreign purchasers of food and agricultural products as well as the certified producers have all taken the system as an important source of information. The management and supervision of organic producing companies in China are mainly based on the organic certification system, which means the approved certification authorities perform the certification of organic products from producing companies, and report the certified organic production information to the Information System.

By December 31, 2014, 23 certification authorities[2] in total have been accredited by CNCA to carry out the certification of organic products according to the national standards of Organic Products (GB19630), Administration on Certification of Organic Products as well as Implementation Rules of Organic Product Certification, which are all recognize by the China National Accreditation Service for Conformity Assessment (CNAS). Unless otherwise specified in this report, the data are all from the Information System, except for those in Part 5 and Part 6 which are according to foreign certification standards.

In 2014, there are 6 international certification bodies carrying out certification within China in accordance with foreign standards, including ECOCERT from France, BCS from Germany, CERES from Germany, ONA from Japan, IBD from Brazil, and BAC from Italy. The data of foreign certification in Part 5 and Part 6 are all from the authorities mentioned above.

Analysis scope and principles

Regions and product scope

The production regions of organic products covered by this report include 23 provinces, 5 autonomous regions, 4 direct-controlled municipalities and 2 special administrative regions of China, as well as production areas in other 21 countries, such as Italy, Spain and Austria, which are certified within the territory of China according to Chinese or local standards for organic products. All of these regions were issued with valid organic certification from January 1, 2014 to December 31, 2014. According to the latest version of *Organic Product Catalog*[3] updated by CNCA, this report will divide organic products into four categories: plant products (including wild collection plants), livestock and poultry products, aquatic products and processed products, then classify and analyze the organic production activities according to this classification.

1、The website of CNCA is http://www.cnca.gov.cn/ywzl/rz/spncp/.
2、See in Appendix 1.
3、See in Appendix 2.

Analysis principles and related explanations

In the process of data analysis, the scale of organic production is usually characterized by indicators like area, yield and quantity of production. In the production of organic plants, which includes organic crop cultivation and wild collection, the scale of production is usually represented by the production area and yield. Following aspects are normally involved in the analysis process: the total area of organic cultivation, the production area of different crops in different provinces. To be specific, the production area herein is referred to the cultivated/sown area of each crop, including the area of the same farmland with more than one cultivation, especially for the multiple cropping of vegetables. The organic farming area always includes both the organic growing area and the conversion area. The conversion period products will be mentioned specifically in the article. For organic production of livestock and poultry, the production scale is mainly indicated by yield and amount, while yield is used to illustrate the production scale of aquatic and processed products.

In some regions of China, traditional agriculture and community support agriculture, which is emerging gradually these days, are still existing. Their way of production is generally in line with the principles of organic agriculture. However, their products have not been certified yet, for which they are not included in the organic products discussed in this chapter. In analyzing the distribution of organic production areas, the relevant information of certificate is based on the location of the applicant, which is not necessarily the same place where the products are produced and processed. Thus, there will be some deviations between distribution of organic certificates and the subsequent organic production areas while conducting the analysis.

Overview of organic production in 2014

Table 1: Types and distributions of certificates for different organic products in China in 2014

	Chinese standards*	Foreign standards
Certified company	8,792(66)	1,198
Area of organic cultivation (thousand hectares)	1,124(265)	801
yield of organic cultivation (thousand tons)	6,903(965)	3,263
Wild collection (thousand hectares)	822	328
Yield of Wild collection (thousand tons)	613	157
Total production of animal products (thousand tons)	1,058	107
Total production of aquatic products (thousand tons)	294	3
Production of processed product (thousand tons)	2,573	2,276
Registered amount of organic labels (billion)	1.056	--
Verified production of organic products (thousand tons)	432	--

Estimated sale value of organic products (billion yuan)	30.2	
Export volume of organic products (thousand tons)	--	284.7
Export value of organic products (billion USD)	--	0.586

* Data in brackets are overseas certification based on Chinese standards for organic products

By December 31, 2014, 8,792 manufacturers have obtained 11,499 organic certificates with Chinese standards in total, distributed in 23 provinces, 5 autonomous regions, 4 directly-controlled municipalities and 2 special administrative regions all over China. In 2014, 10 certification authorities from 21 countries in total carried out Chinese standard certification overseas, in which 121 organic certificates were issued and 66 companies were certified. In the same year, the number of Chinese producing enterprises complied with foreign standards of production and certification came to 1,198, with 1037 organic producing bases and 698 organic processing plants for organic products (Table1).

Overall, the total production area of organic plants in accordance with Chinese organic standard was 1.945 million hectares, of which the area of organic farming was 1.124 million hectares and the area of wild collection was 822 thousand hectares. The gross production of organic plant products was 7.516 million tons, of which 6.903 million tons was certified organic products and 613 thousand tons was wild collection. The top five provinces in China with largest organic cultivation areas in accordance with the national organic standards was Heilongjiang (220 thousand hectares), Inner Mongolia (142 thousand hectares), Guizhou (108 thousand hectares), Liaoning (102 thousand hectares), and Xinjiang (74 thousand hectares). The main regions for wild collection were the northeast and northwest of China; the top five provinces were Heilongjiang (281 thousand hectares), Jilin (84 thousand hectares), Qinghai (67 thousand hectares), Inner Mongolia (61 thousand hectares) and Zhejiang (28 thousand hectares), while wild collection remained very rare along the eastern coastal region.

In 2014, the main organic livestock production in accordance with Chinese organic standards were sheep, cattle, and pigs, of which there were around 4.14 million organic sheep, nearly 1.15 million organic cattle and 160 thousand organic pigs. In the aspect of productivity, the total yield of organic livestock and poultry as well as their relevant products in 2014 was 1.056 million tons, while the total yield of organic livestock was 263 thousand tons. 130 thousand tons came from organic sheep, 113 thousand tons from organic cattle and 14 thousand tons from organic pigs. There were other livestock as well, such as horses, donkeys and deer, but with very small proportion. In poultry production, 1.43 million organic chickens (including broilers and layers) were totally raised in 2014, which took a dominant position in the category. In 2014, the total production of animal products was 793 thousand tons, of which organic milk was the main product with a yield of 784 thousand tons, accounting for 99.0% of the total; the yield of organic egg was 3.8 thousand tons, accounting for 0.5% of the total.

In 2014, the total production of aquatic products was 294 thousand tons, of which aquatic plants shared 187 thousand tons (mainly referring to the production of kelp and laver), accounting for 63.7% of total yield of certified aquatic products; it was followed by fresh fishes (both freshwater fishes and marine fishes) with a yield of 71 thousand tons, accounting for 24.0%, of which 97.4% were freshwater fishes. The yield of crustacean and invertebrate products was 36 thousand tons, accounting for 12.2% of the total. The yield of aquatic vertebrate product (turtles) was 561 tons, only sharing a very small proportion of 0.2%. In 2014, the total production of organic processed

products was 2.284 million tons.

Among all the organic processed products, the yield of cereal milling products was the highest and went to 953 thousand tons, accounting for 41.7% of the total, mainly based on rice (rice flour) and wheat flour; the yield of processed liquid milk and cream ranked the second with an amount of 451 thousand tons, accounting for 19.8%; and the yield of processed feed ranked the third with an amount of 244 thousand tons, accounting for 10.7%. All these three mentioned above accounted for 72.2% in total of the overall production of processed products. The total yield of by-products from vegetable oil processing, pasta and other grain products, liquor and vegetables processed or preserved by vegetable oil was about 50-100 thousand tons, with a proportion between 2.2% and 4.1%; and the yield of fruit and vegetable juice, starch and starch products, meat and by-products processed was less than 50 thousand tons, with a proportion below 2.00%.

In 2014, 10 certification authorities performed certification in 21 foreign countries in total and issued 121 organic product certificates to 66 companies. Italy received the largest number of certificates, followed by Spain, Austria, Denmark, Australia, USA, New Zealand, Germany and Thailand. The total foreign producing area certified by China was 265 thousand hectares, mainly in Turkey, Denmark, Brazil, Italy and Spain; the number of certified foreign organic products was 52, of which 28 were processed products. The total amount of organic products produced aboard was 965 thousand tons, of which milk shared 683 thousand tons, accounting for 70.8% of the total, and the yield of other processed products was 143 thousand tons, mainly including wine, vegetable oils and condiments. In 2014, the main products certified according to foreign standards of organic products were plant products, livestock products, processed products and aquatic products. The total area of certified organic production was 1.1138 million hectares, of which the area of organic planting was 800.7 thousand hectares, and that of wild collection was 328.4 thousand hectares. In 2014, the total production of certified plants was 3.3586 million tons (58.47%), with processed products for 2.2754 million tons (39.62%), animal products for 107.2 thousand tons (1.87%), and aquatic products for 2.5 thousand tons (0.04%).

In 2014, the production value of all organic products added up to 116.4 billion yuan. The production value of processed products was 75 billion yuan, accounting for 64.4% of the total, of which processed liquid milk and cream contributed up to 28 billion yuan. The production value of cereals was 8.5 billion yuan, accounting for 7.3%; it was followed by fruit and nuts with 7.6 billion yuan, accounting for 6.5%. These three products above accounted for 78.3%jointly.

In 2014, 1.056 billion organic labels were registered, of which 727 million were for milk, 36 million for liquor, 28 million for yogurt, 20 million for rice, and 13 million for vegetables and wine. Regionally, Inner Mongolia owned the largest number of 455 million, followed by 35 million in Guizhou, 30 million in Heilongjiang, 26 million in Shandong and 17 million in Guangdong. Among 23 organic certification authorities, the top five in the number of registering organic labels were COFCC, OFDC, WIT Assessment, CHTC and FOFCC.

In 2014, the total verified production based on issued labels was 432 thousand tons, including 354 thousand tons of processed products, accounting for 81.9%, followed by 73 thousand tons of plant products, accounting for 16.8%, 4 thousand tons of aquatic products, and 1 thousand tons of animal products. The verified sale value of organic products was estimated according to the number of issued labels and the current price of organic products. In 2014, the sale value of organic products was 30.2 billion yuan, of which 28.37 billion yuan was from processed organic products, accounting for 93.7% of the total. And it was followed by 1.62 billion yuan of plant products, accounting for 5.4%; the sale value of aquatic products and animal products was 240 million yuan and 40 million yuan respectively. The statistics of livestock and poultry products only includes the sale value of eggs. Meat products from livestock and poultry was included in the category of processed products.

In 2014, the export value of organic products from China was $ 586 million, with a total trade volume of 284.7 thousand tons. In the aspect of trade value, processed products was the largest with $ 403 million, accounting for 68.83% of the total. And it was followed by the primary agricultural products of $173 million (29.48%), wild collection products of $7.7147 million (1.32%) and animal products of $ 2.1914 million (0.37%). In the aspect of trade volume, primary agricultural products ranked the first with 135.3 thousand tons, accounting for 47.58% of the total, which was followed by processed products with 119.1 thousand tons (41.76%), wild collection products with 29.9 thousand tons (10.51%) and animal products with 400 tons (0.14%).

Distribution of certification regions for organic products

Table 2: Distribution of organic certificates in China and overseas in 2014

Province	Number	Province	Number	Province	Number
Heilongjiang	1,236	Hubei	360	Hainan	92
Sichuan	834	Guangdong	357	Gansu	89
Zhejiang	752	Yunnan	356	Ningxia	84
Guizhou	747	Beijing	325	Chongqing	82
Shandong	738	Jiangxi	318	Qinghai	26
Jilin	576	Henan	313	Tibet	20
Jiangsu	545	Hebei	306	Tianjin	18
Inner Mongolia	507	Guangxi	268	Taiwan	7
Liaoning	463	Shanxi	260	Hong Kong	1
Xinjiang	423	Shaanxi	252	Macao	0
Fujian	375	Hunan	194	Overseas	121
Anhui	366	Shanghai	129	Total	11,499

By December 31, 2014, 11,499 valid certificates for organic products have been issued in 34 provincial-level administrative regions of China. Except for Macau, 33 provinces, municipalities and autonomous regions carry out a certain amount of organic agricultural production and processing activities and the number of companies that receive certificates is 8,792. The numbers of certificates and companies with certificates have increased by 15.5% and 45.3% respectively, compared with those in 2013.

The distribution of organic production areas is affected by a variety of factors, including weather condition, terrain condition and the level of economic development. Table 2 shows the distribution of organic certificates in different provinces of China in 2014. Similar to 2013, most of the organic certificates were issued in two regions: the northeast and the eastern coastal area. The northeast region had more companies and production bases due to its unique advantage of regional resources; while the eastern region had a higher level of industrialization, especially a concentration of processing enterprises, due to the active market. Overall, in China the distribution pattern of

companies with organic certification is substantially more in the East and less in the West. However, in recent years, although Sichuan, Guizhou, Inner Mongolia and Xinjiang are located in the western region of China with underdeveloped economy, the organic industry in these provinces are developing very fast, especially in Guizhou and Sichuan. The organic agriculture in these two regions has been growing rapidly thanks to their unique ecological advantages.

Judging from the regional distribution of obtained organic certificates, the top five provinces were Heilongjiang, Sichuan, Zhejiang, Guizhou and Shandong. Among them, Heilongjiang had the largest number of 1,236 organic certificates, accounting for 10.7% of the total number of valid certificates issued in 2014; besides Heilongjiang, Guizhou, Sichuan, Zhejiang, Shandong, Jilin, Jiangsu and Inner Mongolia were also issued with more than 500 valid certificates. Other regions like Tibet, Qinghai and Gansu had the minimum distribution of organic agriculture.

Table 3: Distribution of certified organic production companies in China and overseas in 2014

Province	Number	Province	Number	Province	Number
Heilongjiang	573	Guangdong	208	Chongqing	75
Sichuan	492	Hebei	185	Gansu	50
Zhejiang	434	Hubei	184	Ningxia	45
Shandong	403	Anhui	184	Hainan	22
Jilin	327	Shaanxi	180	Qinghai	17
Jiangsu	320	Jiangxi	179	Tianjin	16
Xinjiang	273	Guizhou	172	Tibet	14
Inner Mongolia	267	Henan	160	Taiwan	5
Liaoning	226	Guangxi	139	Hong Kong	2
Beijing	225	Shanxi	134	Macao	0
Yunnan	214	Hunan	116	Overseas	66
Fujian	212	Shanghai	77		

The distribution pattern of companies issued with organic certificates is similar to that of organic certificates, in which Heilongjiang had the largest number of 573 companies, followed by Sichuan, Zhejiang, Shandong, Jilin, Jiangsu and Xinjiang, all of which had more than 250 certified organic production companies (Table 3). There were also 66 certified companies overseas.

Distribution of certificates for different organic products

According to the Organic Product Catalog, organic products are divided into 4 categories: plant products (including organic cultivation and wild collection), livestock and poultry products, aquatic products and processed products. The distribution of the issued certificates in each type of organic products and the respective proportions to the total amount (11499) were shown in Table 4. In 2014, most of the organic products produced in China were still primary products, of which plant products

had a large proportion in certificate number, followed by processed products, while those of the livestock & poultry and aquatic products were quite small. Among them, crop cultivation owned 7467 organic certificates, accounting for up to 64.9% of the whole amount, and wild collection had 334, accounting for 2.9%; livestock & poultry and aquatic production had 542 and 560 respectively, relatively less, accounting for less than 5% of the total; while processed products had 3,000 certificates, accounting for almost a quarter of the total.

Table 4: Types and distribution of the issued certificates for various organic products in China[4]

	Crop cultivation	Wild collection	Livestock and poultry products	Aquatic products	Processed products
Number	7,467	334	542	560	2,977
Proportion (%)	64.9%	2.9%	4.7%	4.9%	25.9%

Development trends of organic industry

The development pattern of organic certificates during 2004-2014 are shown in Figure 1. It can be seen from the Figure 1 that the number of certificates for organic products were increasing continuously during the 11-year period. In 2004, only 22 organic certificates were issued, but in 2014, the total number of certificates were 11, 499 (60 times of that in 2005). The increasing rates in 2013 and 2014 were 25.8% and 15.5% respectively. The development trend of issued organic certificates reflects that the organic industry in China is growing in a fast and stable momentum.

Figure 1: Development trend of organic industry in China during 2004-2014

4、The sum of proportions for various types of certificates is greater than 1 because one single certificate may include more than one type of production activity.

Production, Regional Distribution and Development Trend of Organic Plant Products

Overview of organic crop production

Up to December 31, 2014, the total area of organic crop production complied with Chinese standards for organic products was 1.945 million hectares, of which organic planting area was 1.124 million hectares, and the total area of wild collection production was 822 thousand hectares. The total output of organic plant product was 7.516 million tons, of which the yield of certified organic products was 6.903 million tons, and the total output of wild collection was 613 thousand tons.

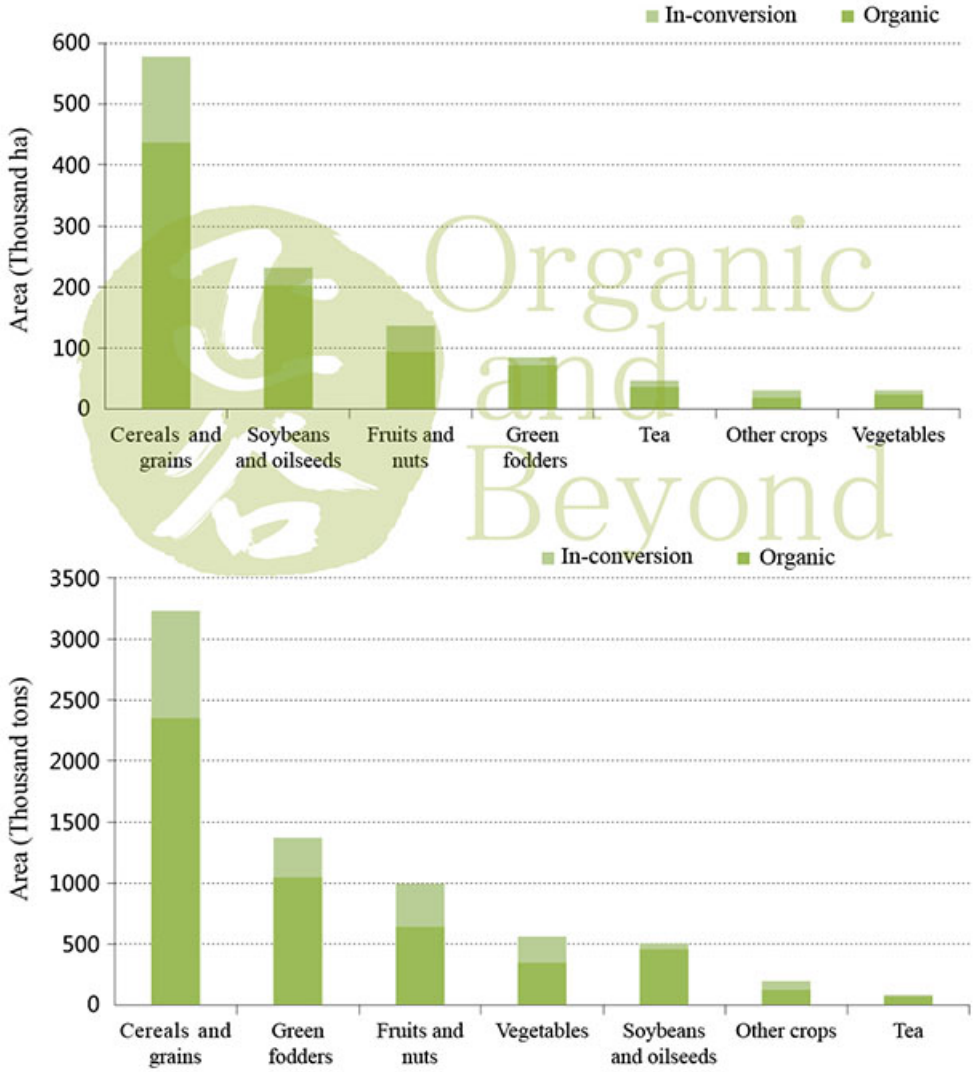


Figure 2: Area and yield of organic crops in 2014

As shown in Figure 2, the crops were classified based on different types with planting area in descending order: cereals and grains, soybeans and oilseeds, fruits and nuts, green fodders, tea, other crops, and vegetables. From the yield of organic plant products, the top three were organic cereal, green fodders, fruits and nuts. And the specific production for each type of crops will be discussed in details in this chapter.

From the aspect of production area, the conversion products of oilseeds and green fodders had low proportions, at 12% and 13% respectively. In addition to green fodders and oilseeds, the conversion products of main crops had the proportions at 22%-42%, and the yield of conversional products accounted for 27%-38%. From the total crops, the production area in conversion period occupied 22.6% of the total area of organic planting; and the yield of the conversion products occupied 27.5% of the total output of organic products.

Regional distribution of organic crop production

Statistics results showed that in 2014, except for Macau, organic production and certification were taken place in 32 provinces, cities and autonomous regions of China including Taiwan, and the national distribution of organic crop area is shown in Figure 3. It can be seen that the provinces in China with organic crop production area of more than 100 thousand hectares were Heilongjiang, Inner Mongolia, Guizhou and Liaoning, among which the organic production area in Heilongjiang reached 220 thousand hectares, accounting for 19.6% of the total national areas for organic production, and the sum of the four provinces took up 51.1% of the total national area for organic production. In addition, Xinjiang had 74 thousand hectares of planting area, ranking the fifth. This set of data indicated that the organic planting area was mainly in northeastern China and Xinjiang province.

Furthermore, the organic production area of the six provinces including Hebei, Jiangxi and Sichuan could reach 25-50 thousand hectares each, and the area of other 12 provinces, cities and autonomous regions including Yunnan and Guangdong was 10-25 thousand hectares each. That is to say, 18 provinces, cities and autonomous regions with an organic production area of 10-50 thousand hectares were basically distributed in the eastern China. As for other western regions, such as Chongqing, Qinghai and Gansu, and other provinces such as Hainan and Taiwan, their area of organic production were all less than 10 thousand hectares.

Development trend of organic plant production

In 2005, China promulgated the National Standards of Organic Products. Since then, Chinese organic industry has entered the standardized development period. As for the area of organic production, the total area of organic planting in China increased yearly from 464 thousand hectares in 2005 to 940 thousand hectares in 2009, which had the largest growth rate and the area doubled compared to that of 2005. From the beginning of 2009, the area of organic production did not increase too much, but the area of conversion farmland had an upward trend. And the total area of organic production was increasing year by year in the past five years, maintaining at 1-1.2 million hectares (Figure 3). In 2014, the total area of organic crops was 1.124 million hectares, decreased by 170 thousand hectares than that in 2013. As for the yield of organic production, it was about 2.78 million tons in 2005, and increased to 4.15 million tons in 2009. The yield of organic crops in China had a growing trend overall and reached 7 million tons in 2013 and 2014.

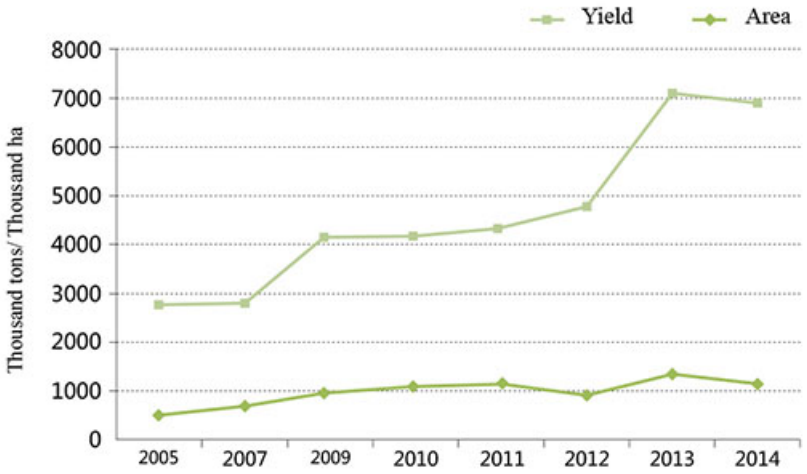


Figure 3: Development trend of organic planting area and organic product yield

Production of different crops

According to the Organic Product Catalog issued by CNCA in No. 2 Announcement in 2012, the organic plant products include ten categories: cereals and grains, vegetables, fruits and nuts, soybeans and oilseeds, flowers, spices, plants for sugar production, other crops (including wild collection), seeds and propagation materials, and plants for Chinese medicine. Based on the actual conditions of organic production, in the six products including flowers, crop products for spices, plants for sugar production and other crops, seeds and propagation materials and plants for Chinese medicine, the production scale of other products was small except for wild collection products and tea. Therefore, the production of these six products is classified as other crops for analysis, and the production of cereals, vegetables, fruits and nuts, soybeans and oilseeds, tea and wild collection products are analyzed separately in this section.

Cereal and grains production

Overview on cereal and grains production

In 2014, ranked by the number of certificate, production area and yield, the top four cereals were rice, wheat, corn and sorghum, the yield of other cereals was low, only barley was in the top ten ranked based on the yield.

3,887[5] certificates were issued for organic cereals, wherein 2,783 were organic certificates, and 1,104 were conversion certificates. In 2014, the top ten organic cereal products ranked by the number of certificate were rice, corn, sorghum, wheat, foxtail millet, mung bean, red bean, black bean, kidney bean and barley, of which the last five were classified as other cereals. Organic rice had the most certificates of 1,358, accounting for 34.94% of the total number of certificate for organic cereals, and the number of certified companies was 1,252; followed by corn with 733 certificates (18.86%), sorghum with 547 certificates (14.07 %) and wheat (462 certificates, 11.89%). The number of certificates for cereal and foxtail millet was 353 and 320 respectively, with the respective proportion of 9.08% and 8.23%; Oats and barley had fewer certificates of 84 and 30 respectively, and the respective proportion of 2.16% and 0.77%(Figure 4)

5、The certificates herein are counted according to each kind of certified product, and the certificates for organic products discussed in the following content are of the same for each type.

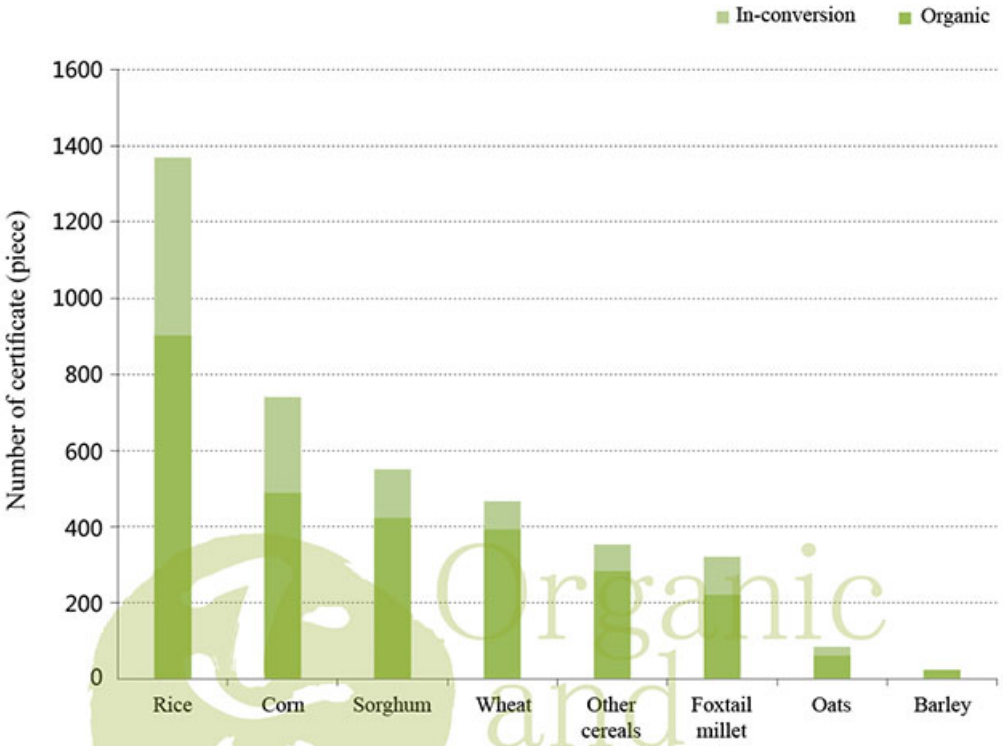


Figure 4: Certificates of organic cereals issued in China 2014

The production area for cereals contributed to the total area and total output of plant production dominantly. In 2014, the total area of cereal production was 566 thousand hectares, accounting for 50.5% of the total area for organic production. Ranking by planting area, the top ten organic cereals were rice, wheat, corn, sorghum, foxtail millet, oats, buckwheat, barley, mung bean and red bean, of which rice had the largest production area of 182 thousand hectares, accounting for 32.1% of the total. And it was followed by wheat and corn, 122 thousand hectares and 116 thousand hectares respectively, and accounting for 21.5% and 20.4% of the total area; these three cereals together accounted for 74.0% of the total certified areas of cereals (Figure 5).

From the aspect of yield, the total output of cereals and grains was 3.197 million tons, and occupied 46% of the total output of organic products; that is, nearly half of the organic plants were cereals and grains. If sorted by yield, the top ten organic cereals and grains were rice, corn, wheat, sorghum, oats, foxtail millet, barley, waxy corn, fresh corn and buckwheat. Among them, the yield of rice was still ranked the first, at 1.051 million tons, accounting for one third of the total; the yield of corn and wheat accounted for 30.8% and 19.0% respectively, corresponding to their proportions of the production area. And the sum of three major cereal crops accounted for 82.7% of the total output of cereals and grains (Figure 5).

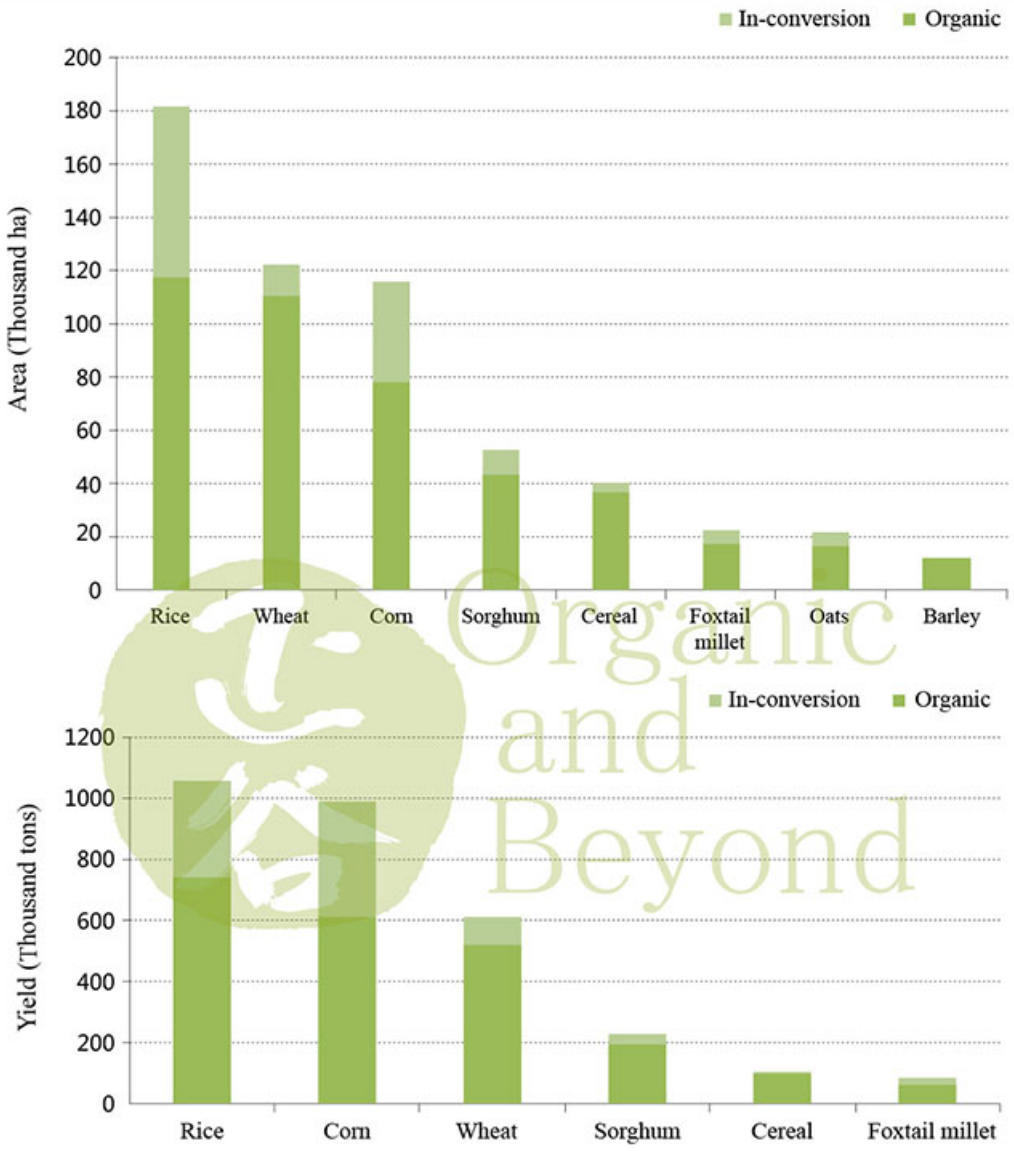


Figure 5: Production of organic cereals and grains in China 2014 (including yield and area)

From the proportions of organic products and conversional products[6], the planting area of cereals in conversion period occupied 24.3% of the total organic plating area, and its yield occupied 27.1% of the total organic production output. The proportions of conversion area for rice and corn accounted for 35.8% and 33.1% respectively, and the proportion of barley, cereal and wheat was less than 10% individually. The proportions of yields for rice and corn in conversion period were more than 30%, for barley and other cereals was less than 6%, and for the rest was at 15% -30%.

4、After the implementation of new version of Administration on Certification of Organic Products on April 1, 2014, the products in conversion period shall be sold only as conventional products. But in this report, because the data refered to the whole year of 2014, including the data of pre-certified products in conversion period. To clarify the products in conversion period, "conversion products" was still used, and it also applicable to the following parts of this report.

Regional distribution

The organic cereals produced based on Chinese standards of organic products were distributed in 32 provinces and cities of China, mainly in the northern region. For example, the top ten provinces ranked by production area of cereals were Heilongjiang, Guizhou, Liaoning, Inner Mongolia, Jilin, Sichuan, Guangdong, Xinjiang, Hebei and Shandong. The sum of organic cereal area in top ten provinces accounted for 83.7% of the total area, which was significantly associated with the characteristics of agriculture cultivation and local climatic conditions. In addition, Guizhou, Jiangsu and Sichuan had also had a number of planting area for organic cereal crops, thus ranking in the top ten.

Heilongjiang topped the list with 160 thousand hectares, accounting for 28.3% of the total area; Guizhou ranked second with 97 thousand hectares, the third to the fifth were Liaoning, Inner Mongolia and Jilin with the proportions of 11.4%, 11.1% and 3.8% respectively; the five provinces above had 71.6% of the total production area for organic cereals. Analyzed by the yield, the cereal production in Heilongjiang reached about 980 thousand tons, accounting for 30.1% of the total output; if adding the yields in three provinces of Guizhou, Liaoning and Inner Mongolia, it accounted for 65.1% of the total output.

Development trend

Figure 6 shows the development trend of production area for organic cereals during 2009-2014 in China. It can be seen from the Figure that the overall of organic cereal production area had an upward trend, and since 2011 it has remained nearly 500 thousand hectares for four years. In 2014, the planting area of organic cereals decreased by 3.4% with comparison to that in 2013. In the same year, the cereals with great changes in planting area included: wheat with a reduction of 41 thousand hectares, foxtail millet, barley and cereals with a reduction of 1 thousand hectares for each; corn and rice with an increase of 10 thousand hectares for each, sorghum and oats with an increase of 1 thousand hectares for each.

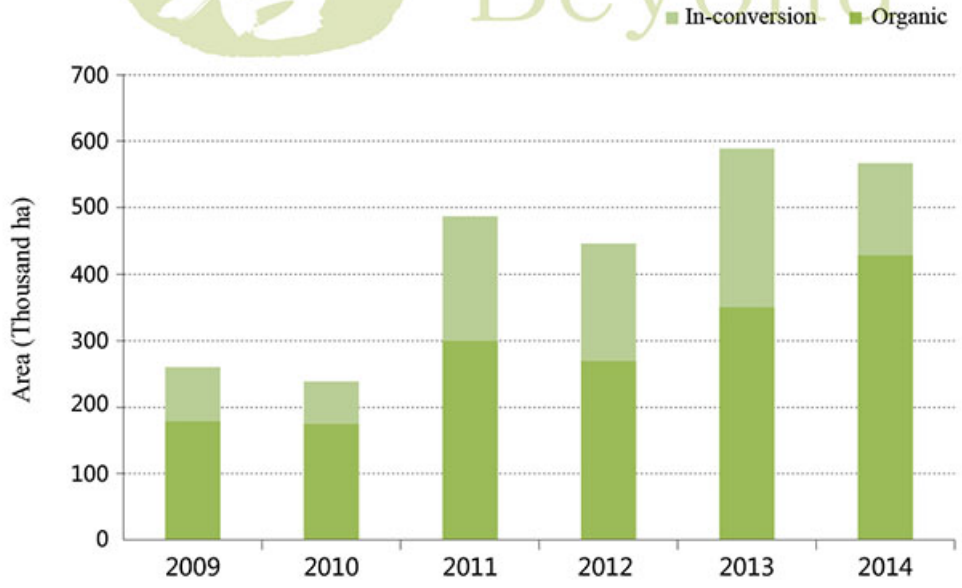


Figure 6: Development trend of production area for organic cereals during 2009-2014 in China

Vegetable Production

Overview on organic vegetable production

According to the classification in Organic Products Catalog, organic vegetables include 14 types, such as Chinese cabbage, tubers and taros, fresh aquatic vegetable. In this statistics, edible fungi are not included.

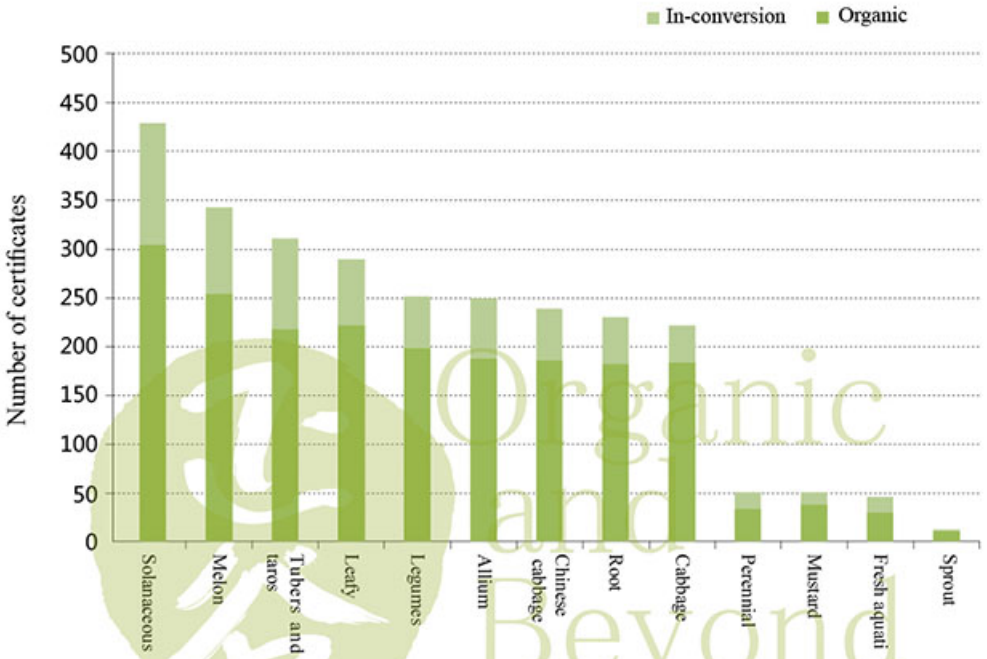


Figure 7: Certificates issued for organic vegetables in China 2014

In 2014, 2,733 certificates were issued for organic vegetables, of which 2,056 certificates were for organic products and 677 for conversion products. Among the 14 types of organic vegetables, solanaceous vegetables had the largest number of certificates of 431, accounting for 15.84% of the total; followed by melon vegetables with 344 (12.6%) certificates, and then tubers and taros with 311 (11.4%) certificates (Figure 7).

If analyzed by individual vegetable type, the top ten organic vegetable products ranked by the number of certificate in 2014 are shown in Figure 8. The first four types among these ten vegetables were all melon and fruit vegetables, and the remaining included four types of leafy vegetables and two types of root vegetables. Among them, tomatoes obtained most certificates of 335, and 323 companies were certified; followed by peppers and cucumbers, with number of certificate of 298 and 282, respectively, and certified companies of 286 and 275, respectively. If ranked by planting area, the top ten organic vegetables were potatoes, bamboo shoots, sweet potatoes, peppers, Chinese cabbage, peas, lotus roots, broad beans, tomatoes and carrots; if ranked according to yield, the top ten organic vegetables were respectively potatoes, Chinese cabbage, sweet potatoes, tomatoes, bamboo shoots, lotus root, peppers, carrots, taros and Chinese yam. Whether it is ranked by number of certificate, production area or yield, the top ten always included potatoes, peppers and Chinese cabbages; and the vegetables with both of production area and yield in the top ten were bamboo shoots, sweet potatoes and lotus roots.

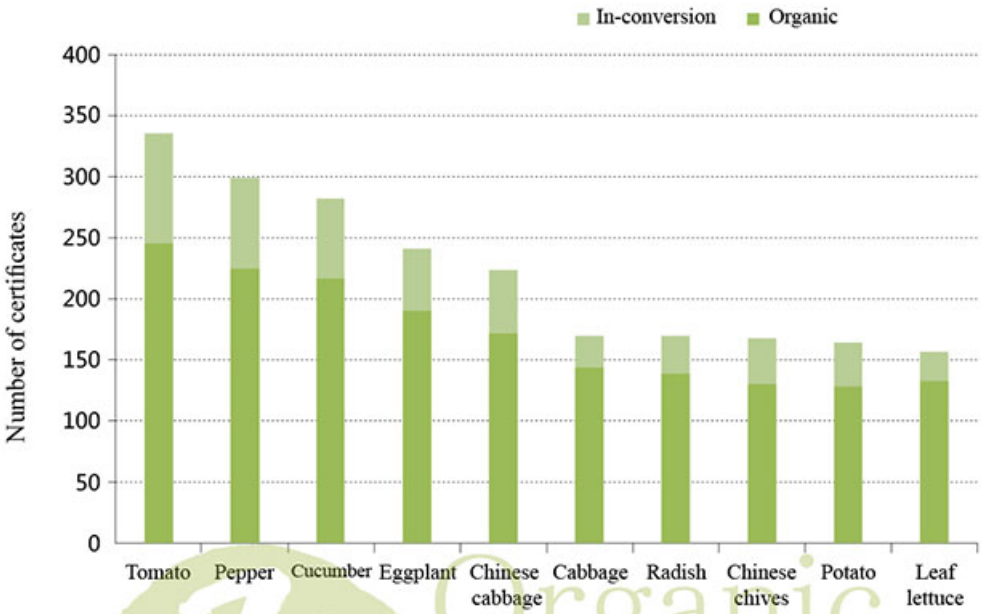
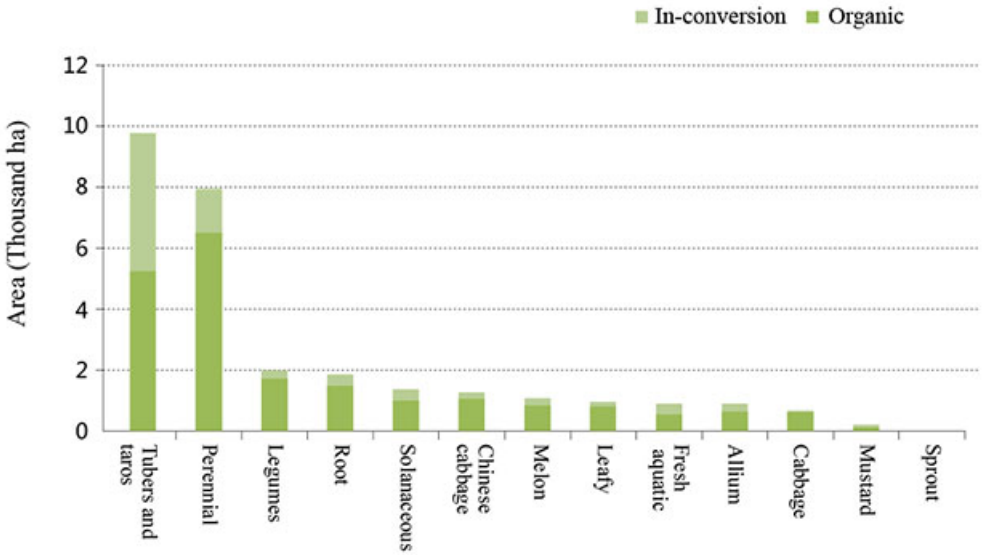


Figure 8: The top ten organic vegetables of China ranked by the number of certificates issued in 2014

From the statistical results on production area, in 2014 the total production area for organic vegetables was 29 thousand hectares, of which the planting area was 21 thousand hectares, and conversion area was 8 thousand hectares. Among them, tubers and taros had the largest area at 9.8 thousand hectares, accounting for 33.4%; and followed by perennial vegetables, legumes, and root vegetables. During production process of sprout vegetables, as they could be produced in water or matrix (no need of soils), they occupied the least land areas, only 10 hectares (Figure 9).



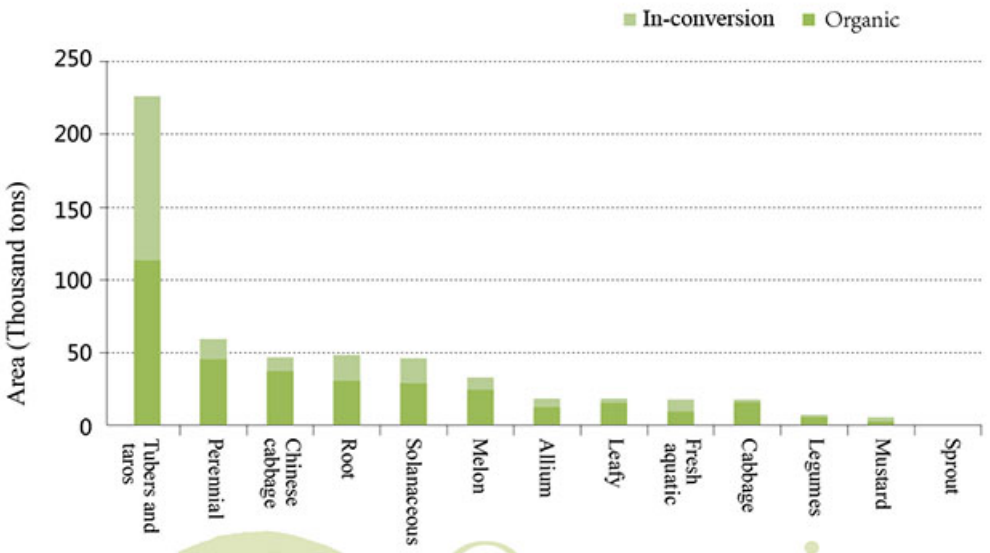


Figure 9: Organic vegetable production in China 2014

From the statistical results on yields, in 2014 the total output for organic vegetables including organic and conversion certification was 0.55 million tons, of which the yield of certified organic products was 0.348 million tons, and the yield of conversion products was 0.202 million tons. Tubers and taros had the highest yield of 0.226 million tons, accounting for 41.1% of the total output, which may result from the special type and growth characteristic of tubers and taros. In addition, the yield of fresh perennial vegetables accounted for 10.9% of the total, ranking the second; and the proportions of the rest types were less than 10%.

As for the proportion of conversion products, the conversion area of vegetables occupied 28.8% of the total area; and its yield occupied 36.7% of the total output. The conversion area of mustard vegetables had a proportion as high as 51.4%; the conversion area of cabbage and legumes vegetables was 6.8% and 11.3% respectively; and the proportions of other conversion vegetables were between 16-47% substantially. The yield of tubers and taros in conversion accounted for 49.6%, cabbage for 6.7%, and other vegetables for 18-45%.

Regional distribution

The organic vegetables produced according to Chinese organic production standards were distributed in 30 provinces and cities of China. Organic vegetables were different from organic cereals in the area and yield distribution, with more dispersed production area than the later.

Analyzed by the production area, Sichuan had a 5.3 thousand-hectare production area for organic vegetables, accounting for 18.0% of the total and ranking the first; Fujian had 3.7 thousand hectares, accounting for 12.4% and ranking the second. Organic vegetable production area in Inner Mongolia, Beijing, Heilongjiang, Guizhou, Zhejiang, and Guangdong was more than 1 thousand hectares, and the sum of production area these regions occupied 66.4% of the total area. As for the production yield, organic vegetable production in Sichuan reached about 78 thousand tons, accounting for 14.1% of the total; and the production yield in Shandong was 59 thousand tons, accounting for 10.8% of the total.

Development trend

Figure 10: Development trend of organic vegetable production area in China

Figure10 shows the condition on the production area for organic vegetables certified in accordance with Chinese standards during 2009-2014. The production area of organic vegetable includes both the production area for certified organic vegetables and certified conversion vegetables. During 2009-2014, the production area of organic vegetables in China increased first and then decreased, it reached the highest value in 2011. From 2011 to 2013, the production area of organic vegetables declined, but not too much. Compared with 2013, the production area of organic vegetables decreased by 41.8% in 2014, mainly because edible fungi were not included in the statistics of 2014. In 2014, the production area of perennial vegetables decreased by 10 thousand hectares, cabbage vegetables by 4 thousand hectares, and legumes, solanaceous, green leafy vegetables, allium vegetables all reduced more than 1 thousand hectares in area. But tubers and taros had a significant increase (2.344 thousand hectares) in production area.

Organic fruits and nuts

Overview on production of organic fruits and nuts

In 2014, the total number of certificates issued for organic fruits and nuts was 1,894, of which 1,002 were for organic products and 892 for conversion products. If analyzed according to the types of organic fruits, the top three ranked by the number of organic certificates in 2014 were other fruits (571), grape (283) and apple (170) as shown in Figure11. The number of certificates issued for other fruits took up the largest proportion, up to 27.3%, while the number of certified companies was 501, and followed by grape with a proportion of 14.94%, and certified companies of 263.

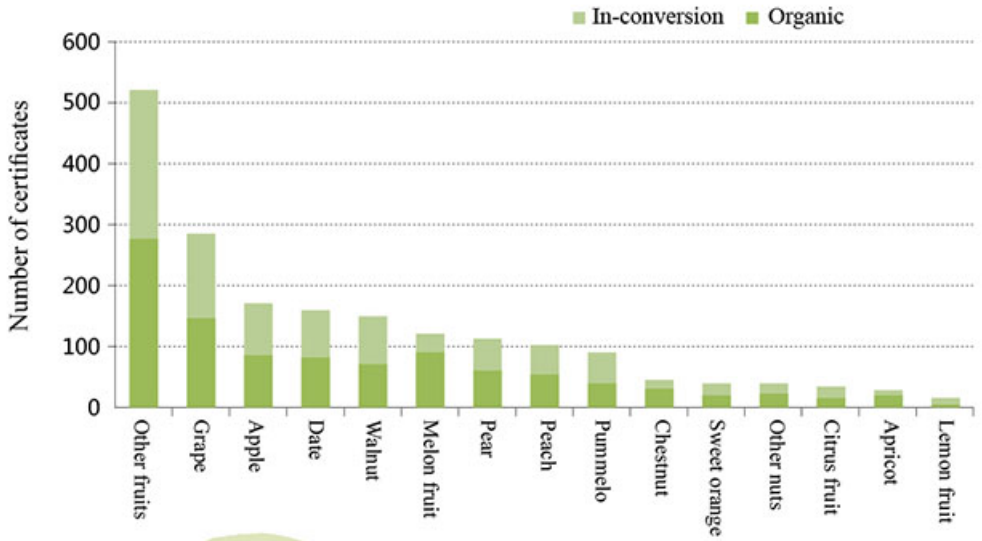


Figure 11: Certificates issued for organic fruits and nuts in China 2014

If analyzed by each kind of organic fruits and nuts, the top ten ranked by the number of certificates issued in 2014 are shown in Figure 12. Among them, walnut was the only nut, and the nine remaining types were fruits. Table grape obtained the certificates with the largest number of 187 and the certified companies of 183; followed by apples and dates, with number of certificate of 169 and 156 respectively, certified companies of 163 and 150 respectively. Whether it was ranked by the number of certificates, production area or yield, the top ten always included date, apple, table grape, pummelo and walnut; and the wine grape was always in the top ten ranking by production area and yield.

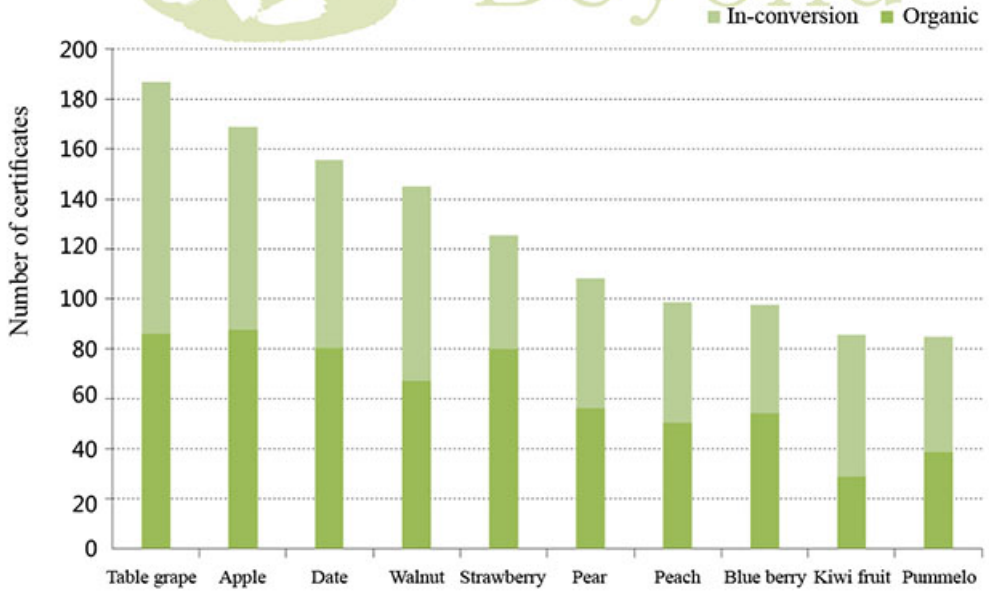


Figure 12: The top ten organic fruits and nuts ranked by the number of certificates issued in 2014

In 2014, the planting area of organic fruits and nuts was 136 thousand hectares, accounting for 12.1% of the total production area of organic crops in China; and the yield was 975 thousand tons, accounting for 14.1% of the total output of certified organic crops in China. And the proportions of planting areas and yield of organic fruits and nuts in conversion were 34.7% and 30.7% respectively.

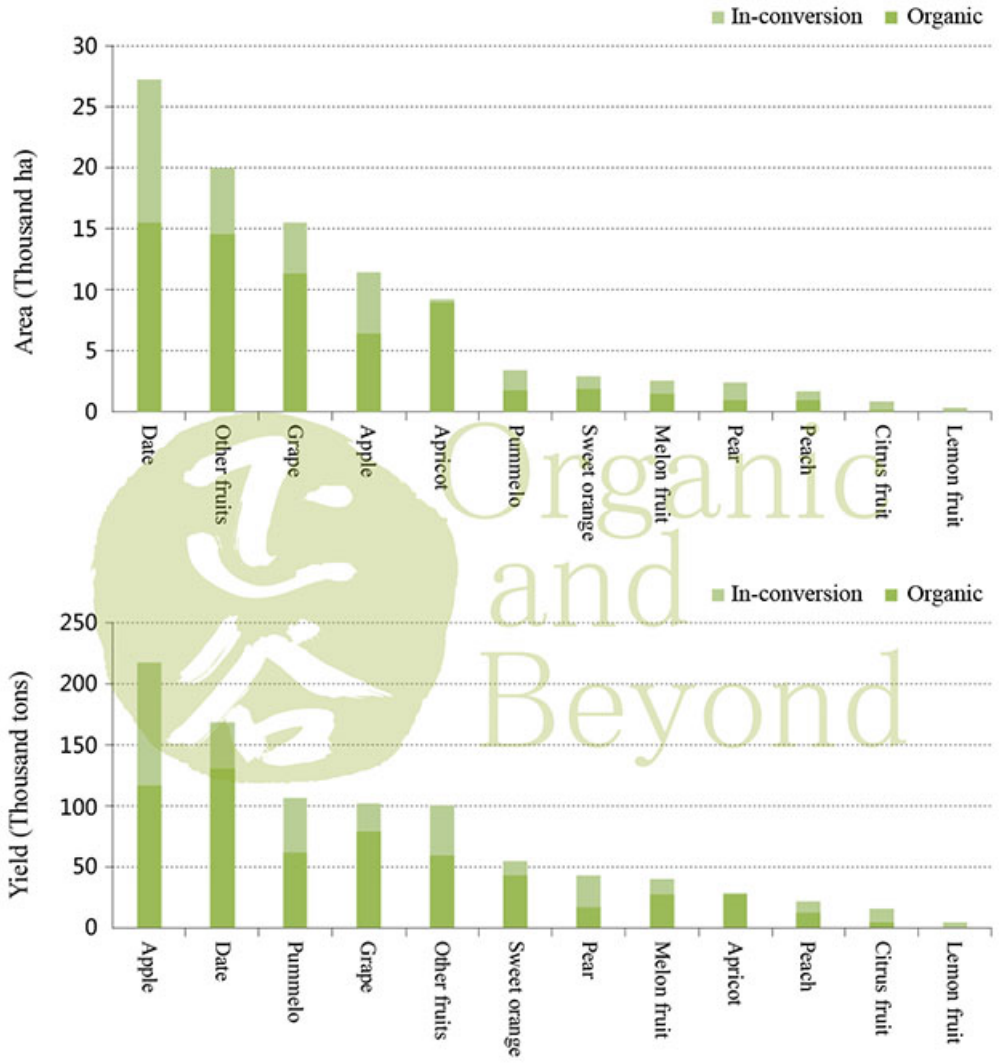


Figure 13: Organic fruits production in China in 2014

The total planting area of certified organic fruits was 99 thousand hectares. And if ranked by the planting areas of organic fruit and nuts, the top ten were respectively date, walnut, hazelnut, apple, wine grape, chestnut, table grape, kiwi fruit, blueberry and pummelo. Among them, the date had the largest production area, 27 thousand hectares, accounting for 20.2% of the total; other fruits had a production area of 20 thousand hectares, accounting for 14.9% of the total. Grape, apple and apricot ranked from the third to the fifth; and the proportions of production area in conversion for most fruits were from 1/3 to 2/3. Analyzed by the yield, 947 thousand tons of organic fruits was produced; if sorted according to the yield of organic fruits and nuts, the top ten were date, apple,

pummelo, wine grape, pear, orange, table grape, walnut, watermelon and muskmelon; Among them, apple had the highest yield, 219 thousand tons, accounting for 22.4% of the total; and followed by date of 170 thousand tons, accounting for 17.4% of the total, and the third was pummelo with the yield of 107 thousand tons. The fruits in conversion had higher proportions, of which lemon was up to 94.9% (Figure 13).

The total production area of organic nuts was 36 thousand hectares, approximately accounting for 26.8% of the total area of organic fruits and nuts, of which walnut had the largest production area, almost of 21 thousand hectares. Analyzed by the yield, the total output of organic nuts was 62 thousand tons, accounting for 6.4% of the total for fruits and nuts, of which walnut had the biggest yield, up to 34 thousand tons (Figure 14). As for the yield of conversion products, other nuts accounted for 63.6%, while both proportions of walnut and chestnut were around 10%.

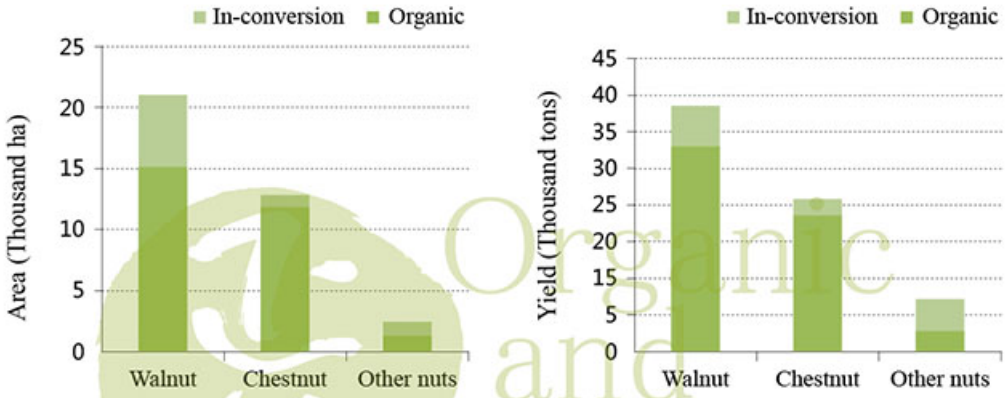


Figure 14: Organic nuts production in China in 2014

Regional distribution

Except for Tibet and Qinghai, all other provinces in China produce organic fruits and nuts. Analyzed by the production area, Xinjiang had the largest production area for organic fruits and nuts of 36 thousand hectares, accounting for 26.7% of the total area, and ranking first in China; Shaanxi had an area of 14 thousand hectares, accounting for 10.8%, and ranking the second; if analyzed by the yield, Xinjiang produced 260 thousand tons of organic fruits and nuts, accounting for 26.6% of the total; and Shaanxi produced 158 thousand tons, accounting for 16.2% of the total.

Development trend

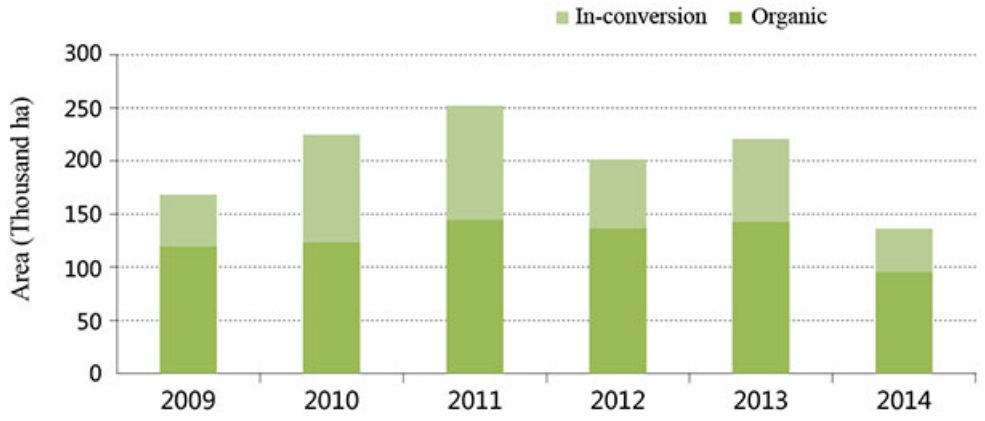


Figure 15: Development trend of production area for organic fruits and nuts in China

Figure 15 is the development trend of production area for organic fruits and nuts certified by Chinese standards during 2009-2013. The production area for organic fruits and nuts include both the area for certified organic fruits and nuts, and that in conversion period, whose proportion remained increasing substantially in the range of 30-45% per year. During 2009-2014, the development trend of production area for organic fruits and nuts in China was unstable, and in 2011 the area reached the largest value. Since 2012, new organic standards have been enforced, thus more stringent new standards led to the decline in production area in 2012. Compared with 2012, the total production area of organic fruits and nuts increased by 9.9% in 2013. In 2014, the planting area of organic fruits and nuts reduced by 85 thousand hectares than in 2013, mainly including date, other fruits, walnut and other nuts, with the total area reduced by 65 thousand hectares.

Oilseeds

Production overview

Figure 16: Certificates issued for organic oilseeds in China in 2014

Oilseeds are consisted of soybean and other types of oilseeds. The statistics results of 2014 showed that the number of certificates for soybean was 420, of which 319 for organic soybean and 101 for conversion soybean. The number of certified companies was 326. Other oilseeds obtained 380certificates totally, of which 267 for organic crops and 113 for conversion crops, and the number of certified companies was 346 (Figure 16).

In 2014, the top ten organic oilseeds ranked by number of certificate were as shown in Figure 17. Soybean obtained the most certificates of 415, and 323 certified companies; followed by peanut and tea seed, with 130 and 89 certificates respectively, and with 124 and 87 certified companies respectively. If sorted by production area, the top ten organic oilseeds were soybean, tea seed, sunflower seed, camellia seed, peanut, rapeseed, safflower seed, flaxseed, sesame and cannabis seed; if sorted by yield, the top ten organic oilseeds were soybean, tea seed, sunflower seed, peanut, rapeseed, camellia seed, flaxseed, safflower seed, sesame and pumpkin seed. Whether it was ranked by the number of certificate, production area or yield, soybean, peanut, tea seed, sunflower seed, flaxseed, sesame, rapeseed and safflower seed were always in the top ten.

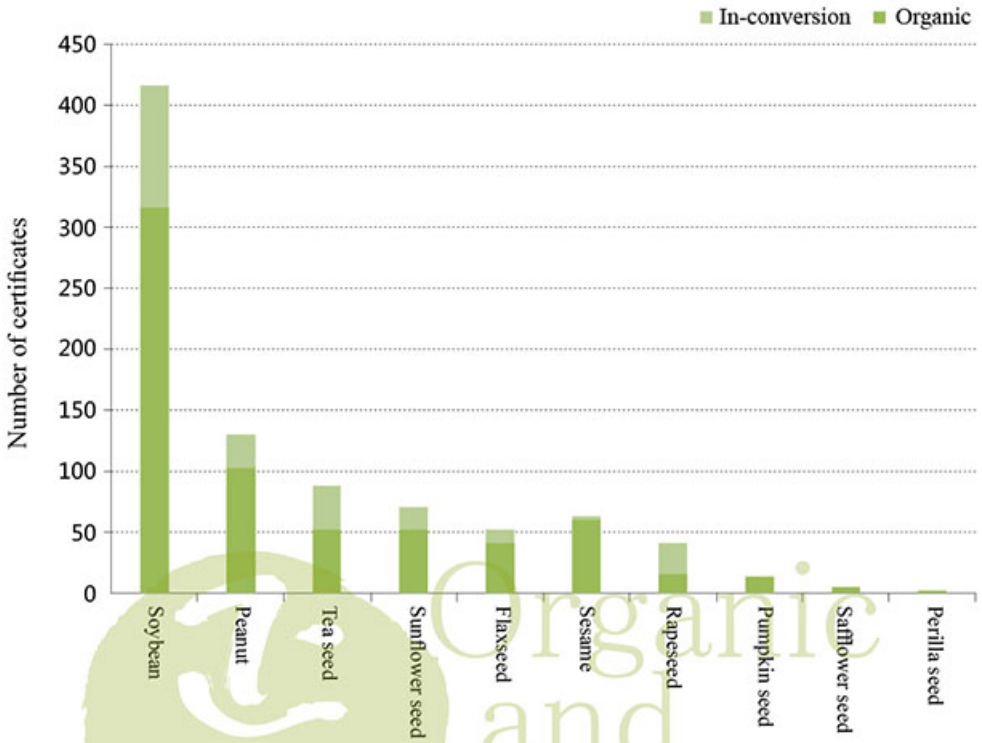


Figure 17: The top ten organic oilseeds ranked by the number of certificates issued in 2014

In 2014, the total production area of organic oilseeds certified in China was 231 thousand hectares, and the total output was 516 thousand tons. The production area of soybean was 101 thousand hectares, accounting for 43.8% of the total, and the production area of other oilseeds was 130 thousand hectares, accounting for 56.2% of the total. The total output of organic soybean was 313 thousand tons, accounting for 60.6%, and the total output of other oilseeds was 203 thousand tons, accounting for 39.4% (Figure 18).

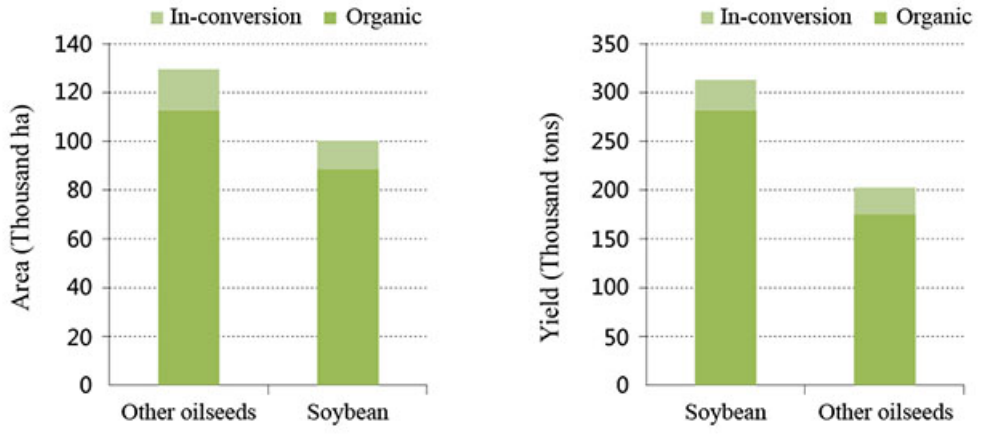


Figure 18: Organic oilseeds production in China 2014

Regional distribution

According to Chinese standards on organic products, organic oilseeds were produced in 29 provinces and cities. Analyzed by the production area of organic oilseeds, Heilongjiang had 49 thousand hectares, occupying 21.4% of the total area, and Liaoning ranked the second with an area of 34 thousand hectares, accounting for 14.7%. In Heilongjiang and Liaoning, the main kind of oilseeds was soybean. The province ranked the third was Jiangxi, with the main kind of organic oilseeds as camellia seed. Besides, each production area of organic oilseeds in Hunan, Inner Mongolia, Hebei, and Anhui was also within the range of 10-30 thousand hectares. If analyzed by the yield of organic oilseeds, Heilongjiang produced about 131 thousand tons, accounting for 25.4% of the total; and Liaoning produced 103 thousand tons, accounting for 19.9% and ranking the second.

Development trend

During 2010-2014, the production area of soybeans and oilseeds was gradually increasing, and it remained at about 200 thousand hectares. In 2014, the total certified area of organic oilseeds was 231 thousand hectares, and the planting area of organic oilseeds in conversion accounted for about 12-24% of the total (Figure 19).

Figure 19: Yearly development trend of production area for organic soybeans and oilseeds in China

Tea production

Production overview

China is a dominant country for tea cultivation and consumption. According to the data analysis of the National Bureau of Statistics, in 2013 China had an area of tea garden of 2.469 million hectares, and an area of tea picking garden of 1.857 million hectares, and the total output of tea was about 1.925 million tons. In 2014, this amount increased to 2.096 million tons[7].

Analyzed by the conditions of organic tea production, in 2014, the number of certificates issued for organic tea was 924 in total, of which 592 were organic certificates and 335 were conversion certificates. In 2014, the production area of certified organic tea was 460 thousand hectares, and its yield was 88 thousand tons. The production area of conversion tea was 13 thousand hectares, accounting for 28.6%, and its yield accounted for 29.8%

7、National Bureau of Statistics website: http://data.stats.gov.cn/easyquery.htm?cn=C01

(Figure 20). The production area of organic tea accounted for 1.9% of the total, and its yield accounted for 4.2%.

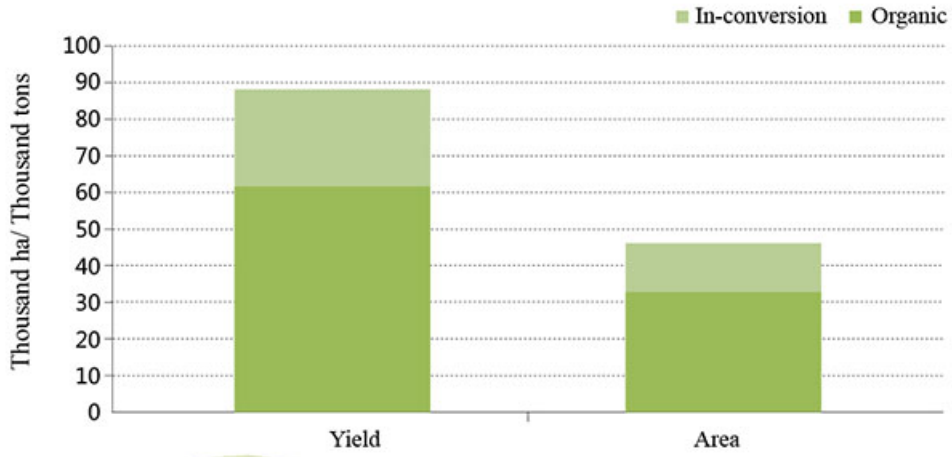


Figure 20: Organic tea production in China 2014

Regional distribution

Analyzed by the regional distribution, 19 provinces, cities and autonomous regions of China produced organic tea, and most of them were located in the south area of Qin Mountains and Huai River where are suitable for tea cultivation. Yunnan province ranked the first, with the production area of organic tea at 10 thousand hectares. The production area of organic tea in each of the five provinces of Sichuan, Guizhou, Guangxi, Zhejiang and Hubei was between 2.5-5.0 thousand hectares. Besides, the production area in Anhui, Fujian, Jiangsu, Jiangxi, Shaanxi, Hunan, Guangdong, Henan and Shandong was in the range of 1.0-2.5 thousand hectares for each, and the production area of other four provinces was less than one thousand hectares. In Taiwan, the production area certified by Chinese standards for organic tea was 16 hectares.

Development trend

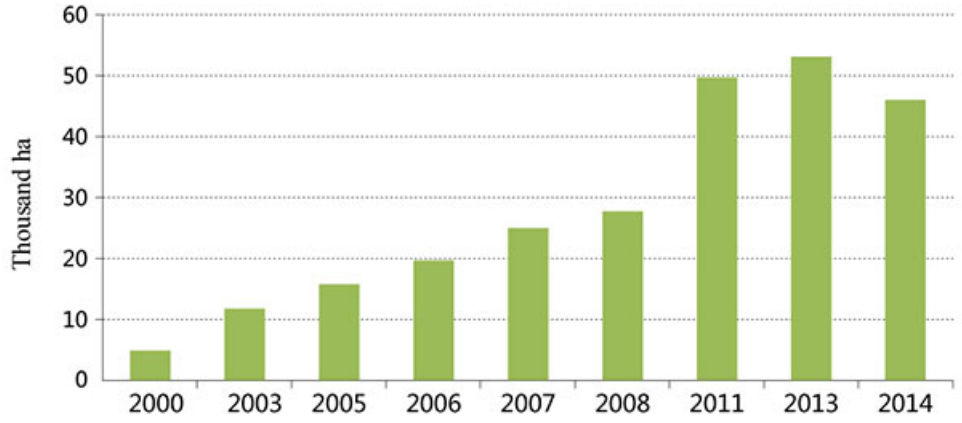


Figure 21: Development trend of production area for organic tea in China

In the early days of organic tea production, according to incomplete statistics, the production area of organic tea was less than 7 hundred hectares, about 10 thousand mu, and during this time the organic tea was mainly produced for export. It can be seen from Figure 21 that since 2006 the production area of organic tea in Chinas has been remained at 20 thousand hectares, and then increased every year. Until 2011, it increased to 50 thousand hectares, which was 2.5 times of that in 2006. During 2011-2014, the production area of organic tea all maintained at more than 40 thousand hectares.

Production of other organic crops

Production overview

Apart from cereals, vegetables, fruits and nuts, beans and oilseeds, and tea, other common plants are classified as other crops, which involve green fodders, Chinese herbs, and textile crops. Because green fodders have relatively larger production area, it is analyzed separately in this report.

In 2014, the total number of certificates issued to green fodders was 105, of which organic certificates were 56 and conversion certificates were 49, and the number of certified companies was 81. In 2014, the total production area of Chinese organic green fodders was 85 thousand hectares, of which organic production area was 74 thousand hectares, accounting for 87.0% of the total area; and the total output was 1.377 million tons (Figure 22). The production of organic green fodders was mainly distributed in the northeast and northwest of China, matching with the regional distribution of livestock in China. In 2014, 20 provinces, cities and autonomous regions of China in total produced organic green fodders, of which Inner Mongolia had a production area of organic green fodders of 58 thousand hectares, accounting for 67.4% of the total, and Xinjiang had 13 thousand hectares, ranking the second and accounting for 15.5% of the total, and the third was Heilongjiang.

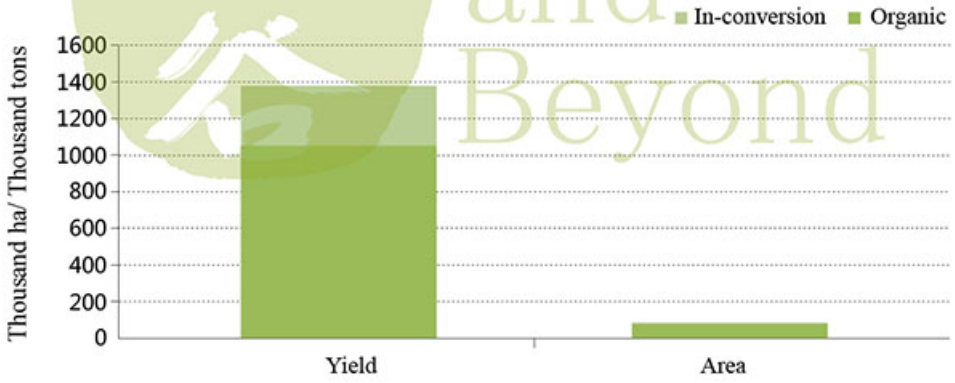


Figure 22: Organic green fodders production in China 2014

In 2014, other crops also included seven types of plants, such as plants for Chinese medicine, textile crops, crop products for spices, flowers, plants for sugar production, seeds and propagation materials, and plants for perfumery (Figure 23). In 2014, the total number of certificates issued to other crops was 442, of which 244 were organic certificates, and 198 were conversion certificates, and the number of certified companies was 421. The most number of certificates was issued to plants for Chinese medicine of 291, and the number of certified companies was 279; the least number of certificates was issued to plants for perfumery of 7, and the number of certified companies was also 7.

The production area of other crops was 31 thousand hectares, and the yield was 199 thousand tons. Among them, the top three ranked by production area included: 9 thousand hectares of organic flower, 8.3 thousand hectares of plants for Chinese medicine, and 7.5 thousand hectares of textile

crops. The production area of plants for sugar production was not large, but its yield ranked the first among the seven crops, reaching 97 thousand tons. The yield of crop products for spices ranked the second, at 33 thousand tons, of which the yield of licorice certified in Xinjiang was up to 30 thousand tons (Figure 24).

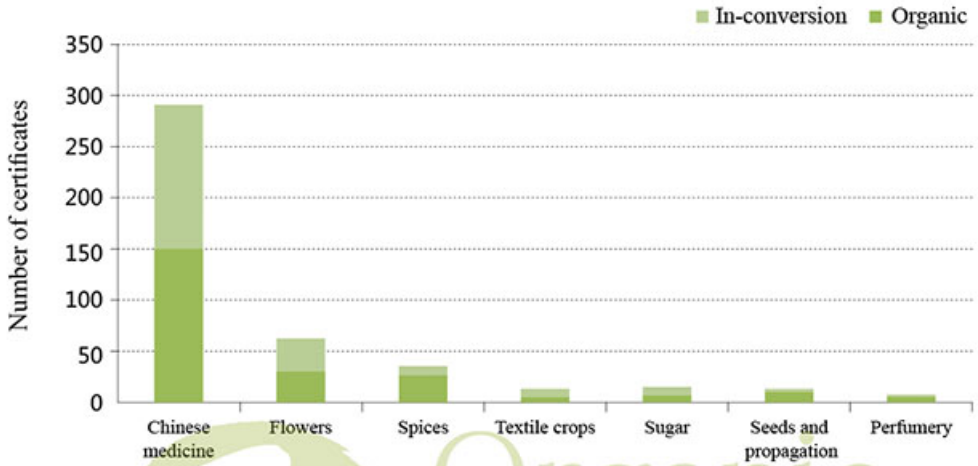
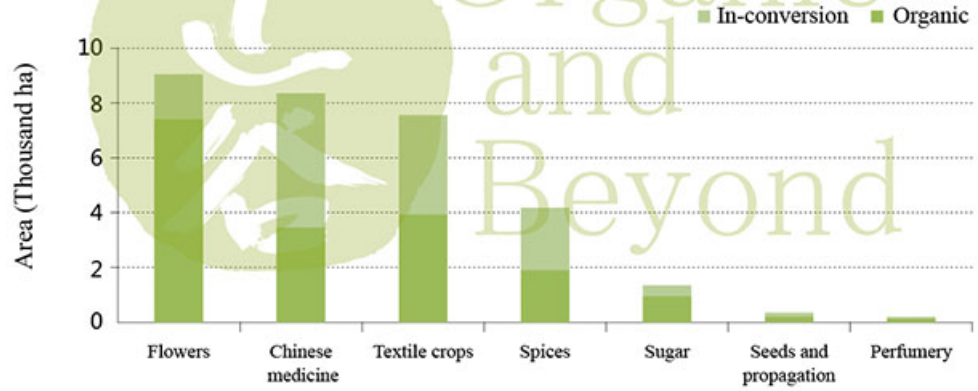


Figure 23: Certificates issued to other organic crops in China 2014



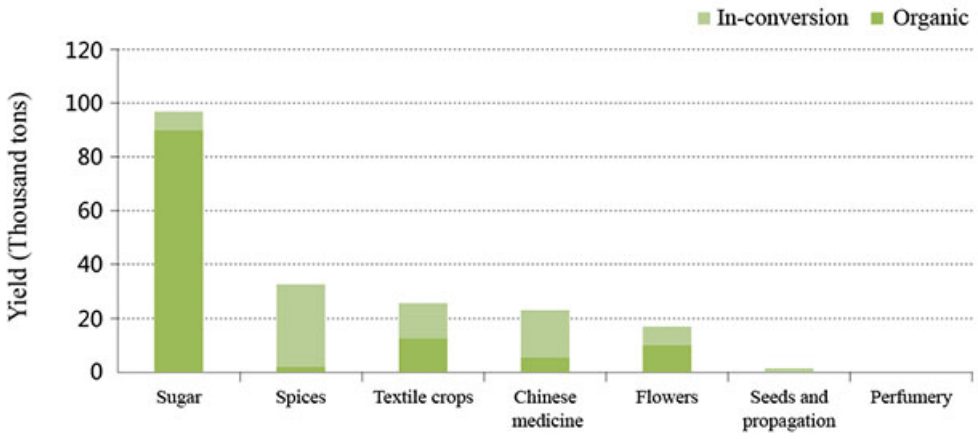


Figure 24: Production area and yield of other organic crops in China 2014

Regional distribution

Analyzed by the regional distribution, the largest production area of other crops was in Zhejiang, of 6,816 hectares, and Xinjiang ranked the second for 4,877 hectares, and then Inner Mongolia for 3,766 hectares. Besides, production area in Yunnan, Heilongjiang, Sichuan, Henan, Shaanxi and Jilin was in the range of 1,000-2,500 hectares each. The main crops produced in Zhejiang were flowers, and in Xinjiang were textile crops and crop products for spices, and in Inner Mongolia were textile crops.

Development trend

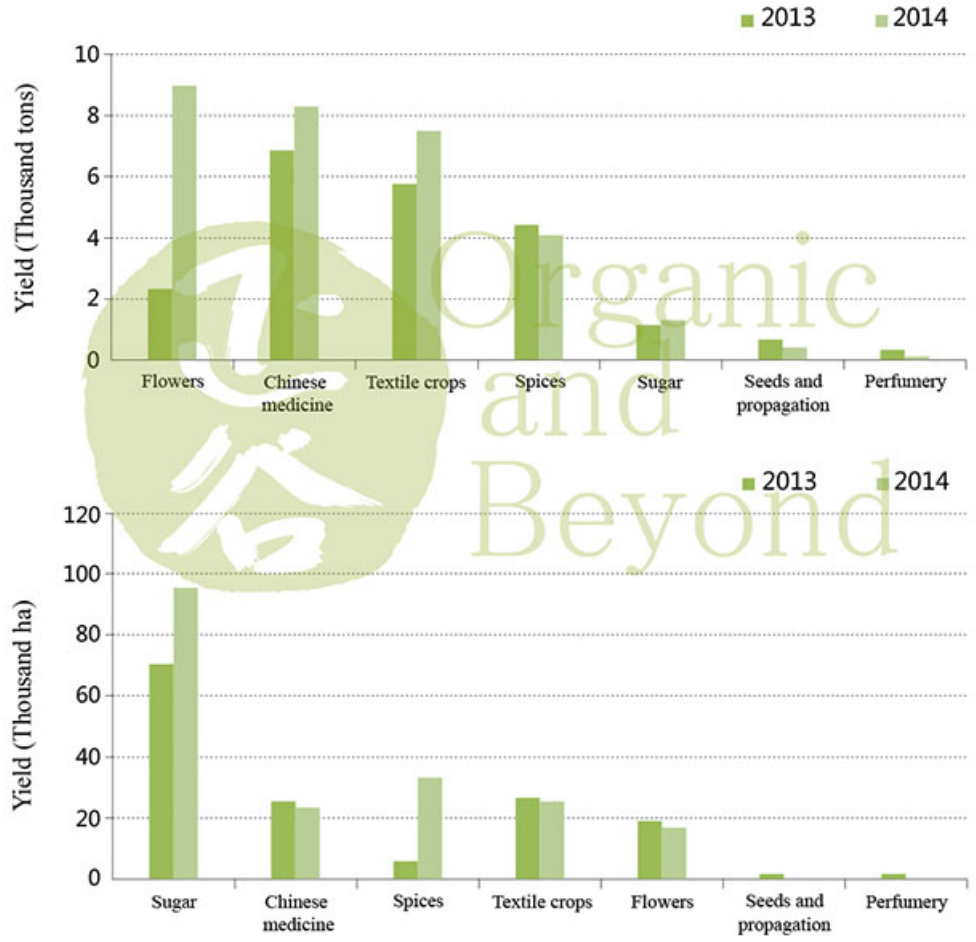


Figure 25: Production area and yield of other organic crops in China during 2013-2014

Compared with 2013, both the production area and yield of other crops increased in 2014. The production area in 2014 was 1.4 times of that in 2013, and the yield in 2014 was 1.3 times of that in 2013. Flowers had the sharpest increase in area by 290.1%, and textile crops, plants for Chinese medicine and plants for sugar production increased by 30.2%, 20.7% and 18.6% respectively; but plants for perfumery, seeds and propagating plants, and spices crops reduced in area. The yield of crop products for spices had the largest growth, ranking the first, and in 2014 it was 5.0 times of

that in 2013. Then it was followed by plants for sugar production, with the yield 1.4 times of that in 2013; but the yields of plants for Chinese medicine, plants for perfumery, seeds and propagating plants, textile crops and flowers production all decreased in 2014 (Figure 25).

Regional distribution and development trend of wild collection organic products

Production overview

In 2014, the area of wild collection organic products was 822 thousand hectares, and the total output was 620 thousand tons. The wild collection products included wild edible fungi, nuts, fruits, wild vegetables, plants for Chinese medicine and so on. Figure 26 shows the top ten organic products of wild collection in China ranked by the number of certificate issued in 2014. Among them, three types belonged to edible fungi, while other three were nuts, each for fruit, vegetable and herb, and one type of oilseed. The certified teaseed obtained the maximum number of certificates at 55, followed by mushroom (29), agaric (27), hazel mushroom (27), pine nuts and others (25), and the numbers of certified companies for the products above were 53, 27, 25, 27 and 25 respectively. The number of certificates for pecan, bamboo shoot, walnut, blueberry and puerarin was 10-20, and the number of certified companies for the products above was also 10-20.

Regional distribution

The regional distribution of wild collection organic products in 2014: the main regions of wild collection organic products were the northeast and northwest of China; the top five regions were Heilongjiang (281 thousand hectares), Jilin (84 thousand hectares), Qinghai (67 thousand hectares), Inner Mongolia (61 thousand hectares), and Zhejiang (28 thousand hectares), but the area of wild collection in the eastern coast was very rare.

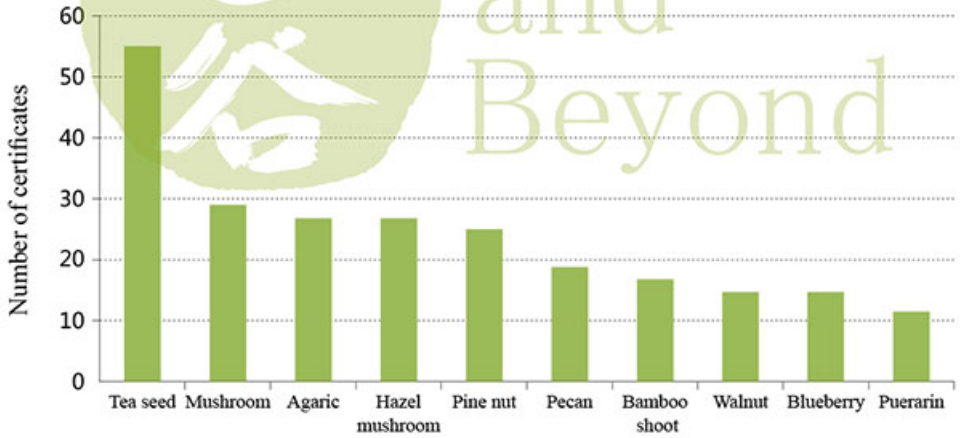


Figure 26: The top ten organic products of wild collection ranked by the number of certificates issued in 2014

Development trend

From 2005 to 2014, the development trend of wild collection area for organic products is shown in Figure 27. From 2011, the wild collection area showed a downward trend, and in 2014 it decreased by 43.1% compared to 2013, but the yield in 2014 increased by 3.3% compared to 2013. The reason was that the collection area of wild fruits increased. And it was the largest part of the collection area, 431 thousand hectares, and accounting for 52.4% of the total; and its yield was 409 thousand tons, accounting for 66.0% of the total. However, in 2013 the collection area of wild fruits accounted for 18.2% of the total, and its yield accounted for 52.6% of the total.

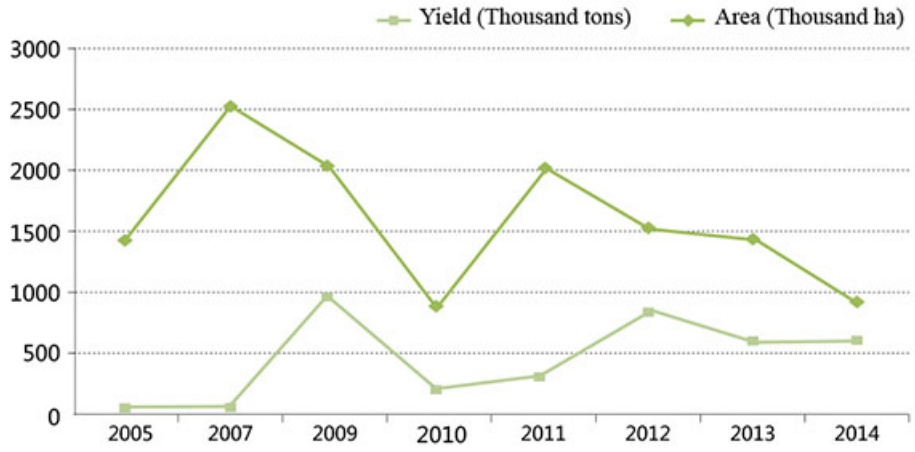


Figure 27: Development trends of wild collection area and yield in China during 2005-2014

Production, Regional Distribution and Development Trend of Organic Animal Products and Processed Products

Development of organic livestock and poultry products in China

Development of organic livestock and poultry farming industry

In 2014, the main types of Chinese organic livestock included beef cattle, dairy cattle, beef and dairy cattle, sheep, goat, pig, horse, donkey and other animals. In 2014, the number of certificates issued to organic livestock and poultry products was 427, of which 382 were for organic products (89.46%), and 45 for conversion products (10.54%). And organic chicken obtained most certificates of 112, followed by pig (101), sheep (99), cattle (83) and other animals (28) (Figure 28).

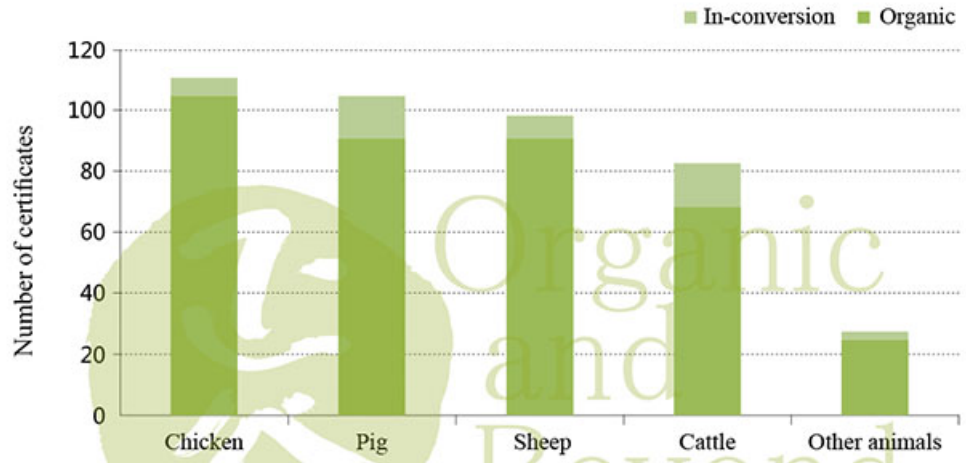


Figure 28: Certificates of Chinese organic livestock and poultry products issued in 2014

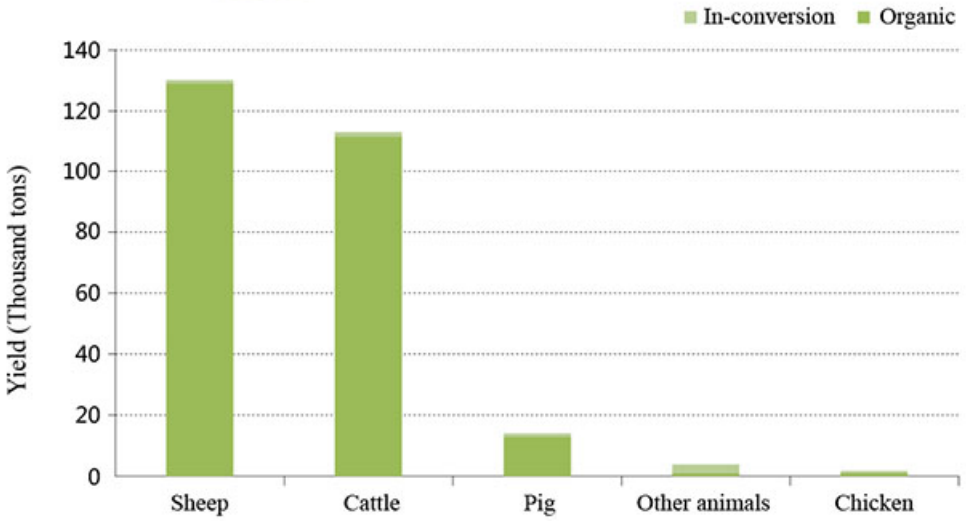


Figure 29 : Chinese organic animal production in 2014

In 2014, the total yield of organic animal products produced according to the national standards was 1.056 million tons. Pig, cattle and sheep were the main types of breeding livestock, of which there were nearly 163 thousand organic pigs, 1.15 million organic cattle, and 4.14 million organic sheep. Analyzed by the yield, the total output of organic livestock was 263 thousand tons, of which the yield of organic sheep was 130 thousand tons, the yield of organic cattle was 113 thousand tons, the yield of organic pig was 14 thousand tons, and it also included the yields of horse, donkey, deer and other animals, but with small proportions (Figure 29).

In poultry production of 2014, the total number of organic chicken was 1.428 million (including broilers and layers), taking a dominant position in the production of organic poultry; in addition, the number of organic duck ranked the second, reaching nearly 60 thousand, and the number of organic geese was 40 thousand.

For animal products, the total output in 2014 was 793 thousand tons, of which organic cow milk was the main animal product of 784 thousand tons, accounting for 99.0% of the total output; and the yield of organic chicken eggs was 4 thousand tons, accounting for 0.5% of the total output.

Regional distribution of organic animal livestock and poultry industry

Except for Taiwan and Macau, the other 32 provinces, cities and autonomous regions of China all had organic animal production. The top five provinces in the yield of organic pig were Heilongjiang, Anhui, Sichuan, Jilin and Shandong, the gross yield of these five provinces accounted for 70.9% of the total, and they were also the major provinces for grain production, which provided a rich source for organic fodders. Besides, other 17 provinces, cities and autonomous regions also had organic pig farming.

Totally, 18 provinces, cities and autonomous regions had breeding of organic beef cattle, and the top five regions were Xinjiang, Qinghai, Sichuan, Inner Mongolia and Beijing, the gross yield of these five regions accounted for 92.3% of the total. Organic sheep breeding in Xinjiang and Qinghai had overwhelmingly predominance in the number, and Inner Mongolia, Tibet and Gansu ranked from the third to the fifth respectively, the sum of these five provinces, cities and autonomous regions accounted for 99.2% of the total number. And it can be seen from the analysis above that the regions for organic livestock farming were mainly distributed in the northwest China and mainly focused on grazing. For the organic poultry farming, organic chicken was the largest in quantity, of which farming was distributed in 26 provinces, cities and autonomous regions of China. And the top five regions ranked by the breeding quantity were Beijing, Guangdong, Xinjiang, Sichuan and Inner Mongolia, with the sum of quantity accounting for 76.2% of the total.

Development trend of organic livestock and poultry industry

Figure 30 shows major organic livestock and poultry production in China during 2009-2014. The quantity of organic pigs was less than that of organic cattle, chicken and sheep. The quantity of organic pigs was stable, remaining in the range of 150-220 thousand. The quantity of organic cattle had an increasing trend, but a slight decline in 2014. The quantity of organic chicken was substantially maintained in the range of 1.1-1.5 million. Although the quantity of organic sheep was the largest, it was not stable but with fluctuations in six years.

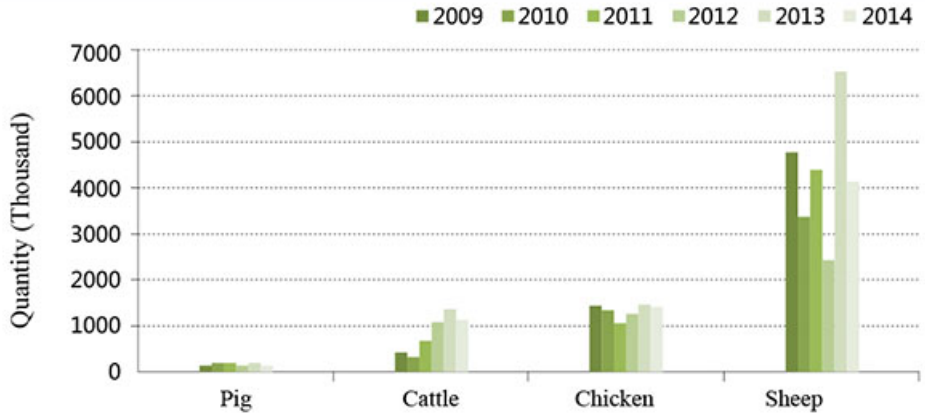


Figure 30: Major types of organic livestock and poultry production in China during 2009-2014

Development of Chinese organic aquatic products

Overview on development of organic aquatic products

According to the *Organic Product Catalog*, the aquatic products are classified into four types: aquatic plant products, fresh and living fish, crustaceans and invertebrates, and aquatic vertebrates. In 2014, the number of certificates issued to the aquatic products was 340, of which for the organic was 301 (88.53%), and for the in conversion was 39 (11.47%). Among of the four types, fresh and living fish obtained the most certificates of 169, followed by crustaceans and invertebrates (104), aquatic vertebrates (42), and aquatic plants (25) (Figure 31).

In 2014, the total output of aquatic products was 294 thousand tons, of which the yield of aquatic plant products (mainly referring to the production of sea kelp and seaweed, etc.) was 187 thousand tons, accounting for 63.7% of the total output of aquatic products certified; the second was fresh fish (including freshwater and marine fish) of 71 thousand tons, accounting for 24.0%, of which 97.4% was freshwater fish. The yield of crustaceans and invertebrates was 36 thousand tons, accounting for 12.2% of the total. The yield of aquatic vertebrates (turtles) was 561 tons, with a small proportion only of 0.2%. The in-conversion proportion (conversion products to organic products) of aquatic plant products, fresh and living fish, crustaceans and invertebrates products accounted for less than 1% of the total; but for the production of aquatic vertebrates (turtle), it not only had a lower yield, but also 45.5% were conversion products (Figure 32).

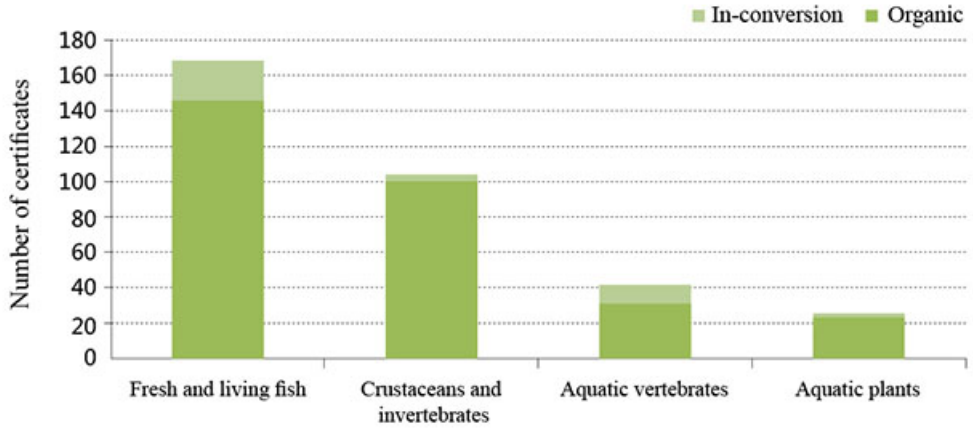


Figure 31: Certificates of Chinese organic aquatic products issued in 2014

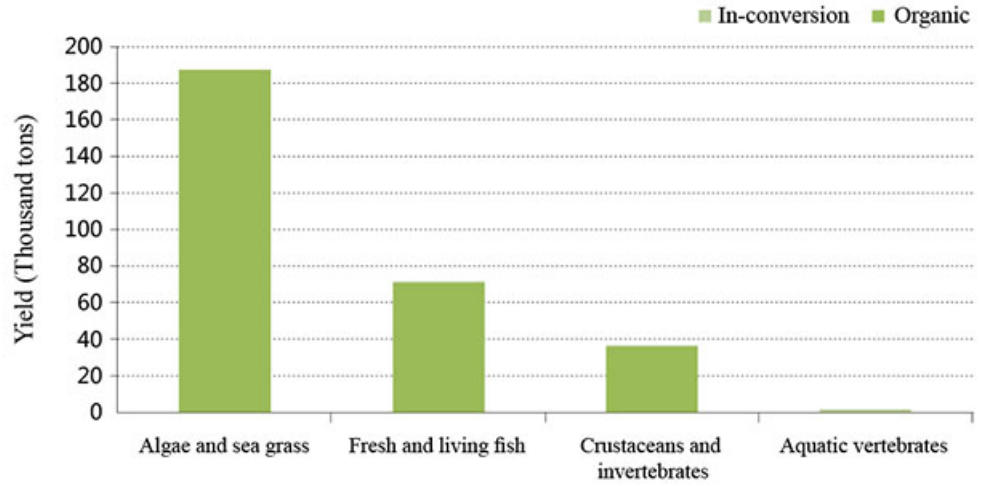


Figure 32: Production of organic aquatic products in 2014

Figure 33 shows the top ten organic products in China ranked by the number of certificates in 2014, of which there were six types of fresh and living fish, three types of crustaceans and invertebrates and one type of aquatic vertebrates (turtles). Bighead carp, silver carp, and grass carp are all common freshwater fishes in China, and in 2014, they obtained the certificates with the number of 97, 76 and 56, respectively, and the number of certified companies were 95, 75 and 55 respectively. Turtles, mitten crabs, sea cucumbers and other products obtained 13-39 certificates, and 13-38 companies were certified.

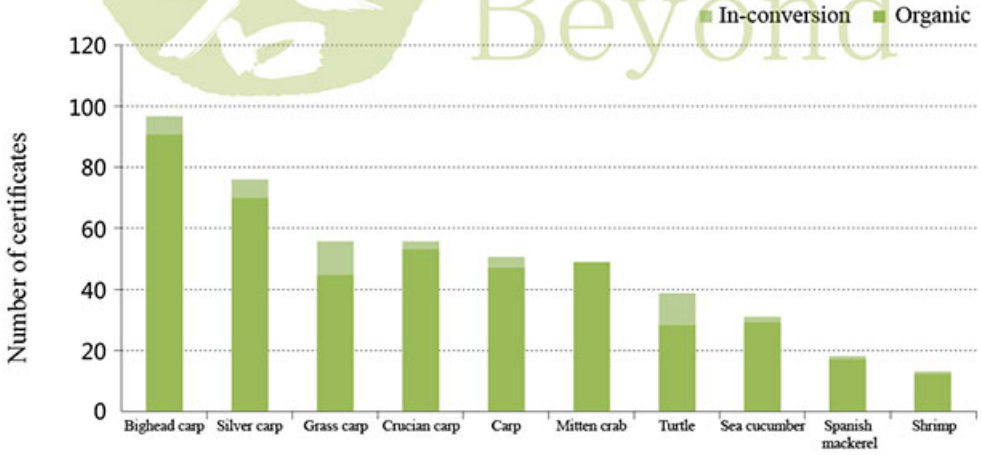


Figure 33: The top ten organic aquatic products ranked by the number of certificates issued in 2014

Regional distribution of aquatic products

Analyzed by the production area of organic products, Shandong had a maximum yield of nearly 173 thousand tons, of which the yield of aquatic plant products (i.e. kelp) was 159 thousand tons. And the following regions in order were Hubei, Liaoning, Fujian and Jiangsu, among which the main aquatic products in Hubei were freshwater fish, in Liaoning were sea cucumbers and crustaceans,

and in Fujian and Jiangsu were aquatic plant products, such as seaweed. The production of organic fish had the widest range, which was distributed in 24 provinces and cities, and aquatic plant products were only produced in 7 coastal provinces and cities including Shandong, Fujian, Zhejiang, Liaoning and others.

Development trend of organic aquatic products

Figure 34 shows the development trend of organic aquatic product in yield in China during 2009-2014. Analyzed by the total output, it was increasing year by year, and increased to 32 tons in 2011 from 17 tons in 2009, and maintained at around 30 thousand tons during the following three years. Among the yields of aquatic products, the yield of aquatic plant products increased yearly, and remained at more than 16 thousand tons during 2012 - 2014, becoming the aquatic product with the highest yield. The production of fresh and living fish was mainly based on freshwater fish, and its yield was relatively stable from 2009 to 2013, remaining at around 100 thousand tons, but reduced to 71 thousand tons in 2014. However, the yield of crustaceans and invertebrates was relatively with large fluctuations, increasing yearly during 2009 - 2011 and 2012--2013. For aquatic vertebrate products, they were mainly referred to turtles or trionychidae. But the yield of these products was very low during these years: almost none in 2009, only 4-5 thousand tons in 2010 and 2011, 10 thousand tons in 2013 and only 561 tons in 2014.

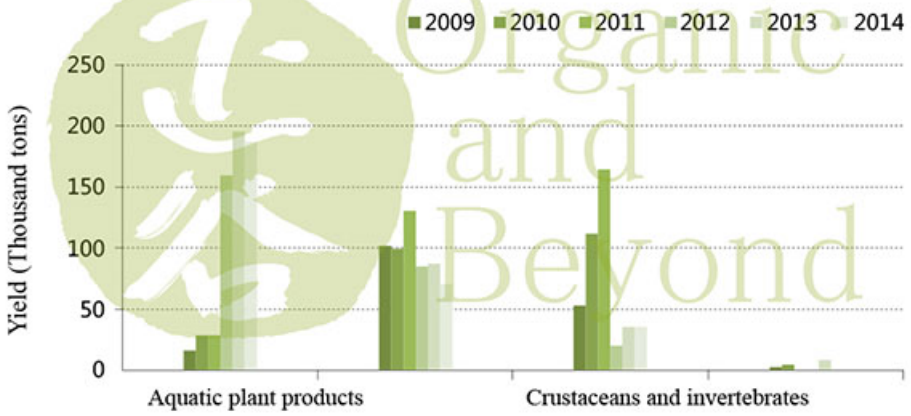


Figure 34: Development trend of organic aquatic product in yield in China during 2009-2014

Certification of organic processed products

Development of organic processed products

In *Organic Products Catalog*, organic processed products are classified into 20 types in accordance with national economic industry classification: processed meat and by-products, processed aquatic products, processed or preserved vegetables, fruit and vegetable juices, processed and preserved fruits and nuts, processed oilseeds, by-product of processed oilseeds, processed liquid milk or cream, other dairy products, grounded grains, starches and starch products, processed fodders, bakery products, noodles and other grain and flour products, non-classified food, liquor, wine, fruit wine and other brewed wine, beer, natural fibers for textile, and clothing. In 2014, 19 types of processed products were all produced and certified except for beer.

In 2014, Organic processed products were issued with 3,602 organic certificates, of which 3,146 were for organic products, and 456 for conversion products; and the number of certified companies was 3,477. The grounded grains obtained the most certificates, 1,570, and the number of certified

companies was 1,516; in addition, non-classified food obtained 834 certificates with 805 certified companies. Also, the processed products with more than 100 certificates included processed oilseeds, processed and preserved fruits and nuts, processed or preserved vegetables, processed meat and by-products, wine, fruit wine and other brewed wine (Figure 35).

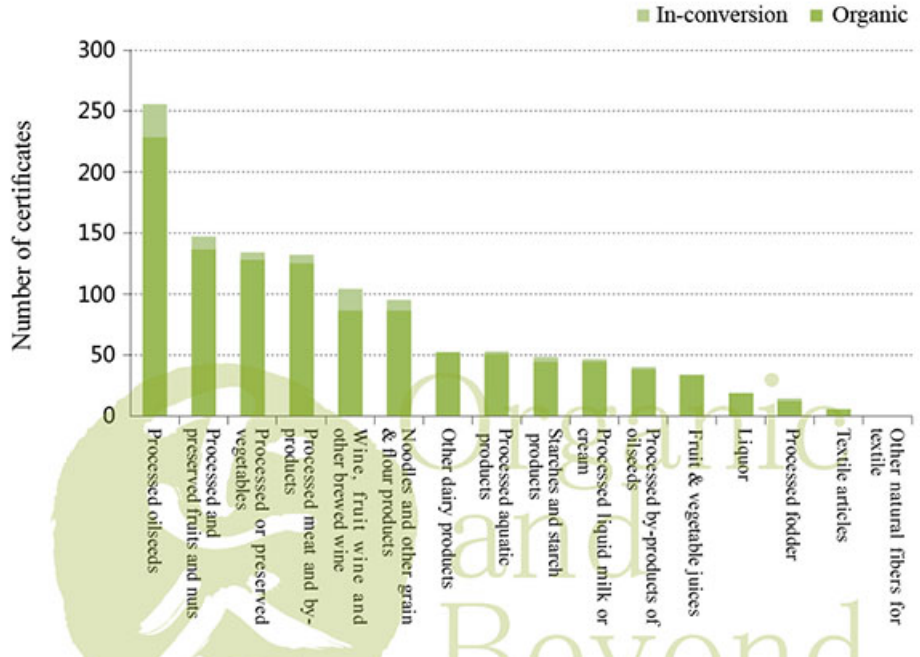
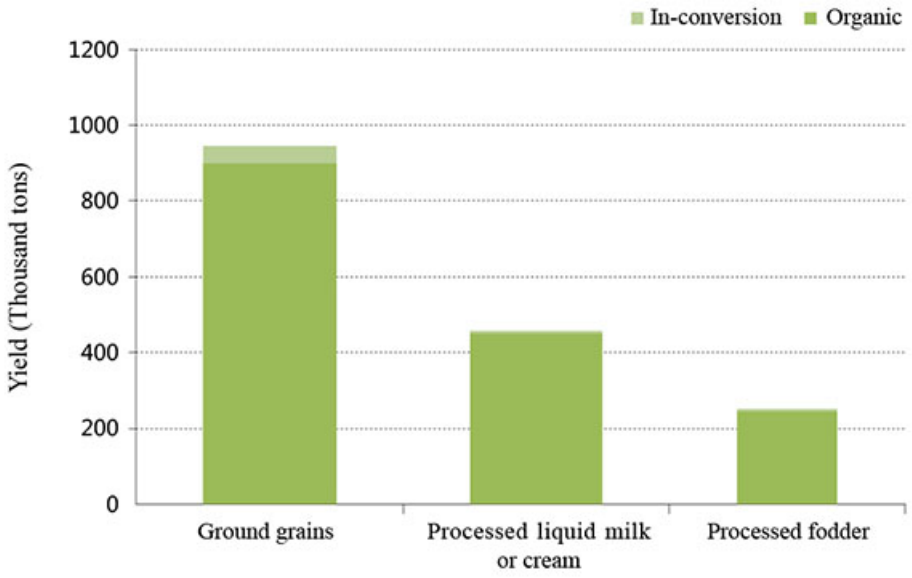


Figure 35: Certificates of Chinese organic processed products issued in 2014



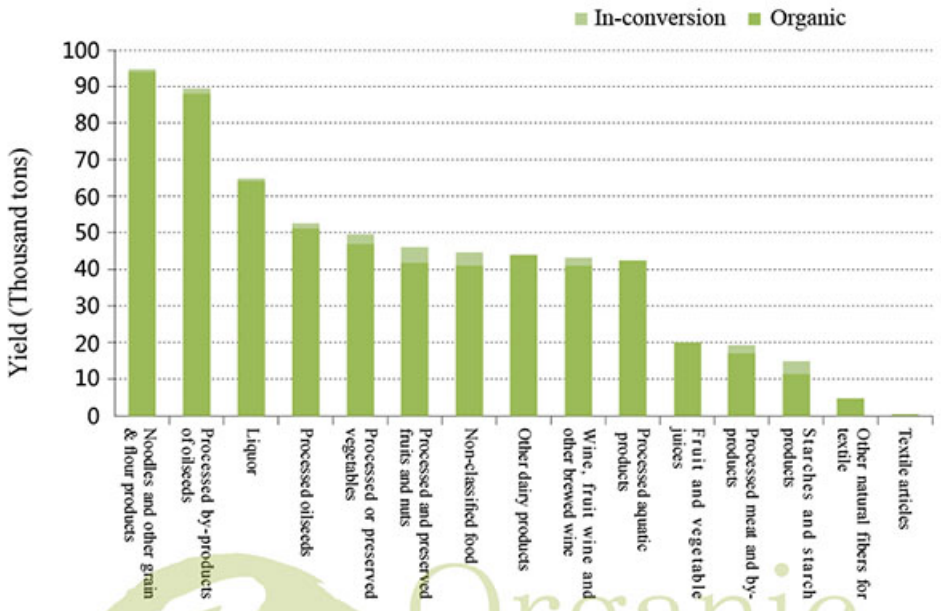


Figure 36: Chinese organic processed product production in 2014

In 2014, the total output of organic processed products was 2.284 million tons. Among the processed products, the yield of grounded grains was up to 953 thousand tons, accounting for 41.7% of the total, mainly rice (rice flour) and wheat flour; the yield of processed liquid milk or cream ranked the second, 451 thousand tons, and accounting for 19.8% of the total; processed fodders ranked the third, 244 thousand tons, and accounting for 10.7% of the total. The gross yield of three products above accounted for 72.2% of the total output of processed products (Figure 36). In these processed products, the grounded grains in conversion accounted for 4.8%, and the conversion products of the processed liquid milk or cream and processed fodders in total accounted for less than 1.2%.

The gross yield of by-products of processed oilseeds, noodles and other grain and flour products, liquor, processed oilseeds and processed or preserved vegetables was 50-100 thousand tons, with a total proportion of 2.2%-4.1%; and the gross yield of fruit and vegetable juices, starch and starch products, processed meat and by-products was less than 50 thousand tons, with the total proportion less than 2.0%.

Regional distribution of organic processed products

In 2014, 33 provinces, cities and autonomous regions except for Macau had organic processed production. And the organic processed products were mainly distributed in the northeast and north of China, also the western provinces such as Guizhou, Xinjiang and others had high yield of these products. Overall, the distribution of processed production was matched with that of planting industry.

The top five provinces ranked by the yield of organic processed products were Inner Mongolia, Heilongjiang, Guizhou, Liaoning and Hebei, and the gross yield of these five provinces, cities and autonomous regions was 1.734 million tons, accounting for 75.9% of the total. Inner Mongolia had the highest yield of 779 thousand tons, of which the yield of processed liquid milk and cream was 415 thousand tons, and processed fodder was 215 thousand tons. Heilongjiang ranked the second in yield, 324 thousand tons, and the main products were processed rice flour, corn flour and oilseeds, of which the yield of rice flour was 170 thousand tons. The third province was Guizhou with a yield

of 291 thousand tons, and the main products were wheat flour, instant food and processed wine.

Development trend of organic processed products

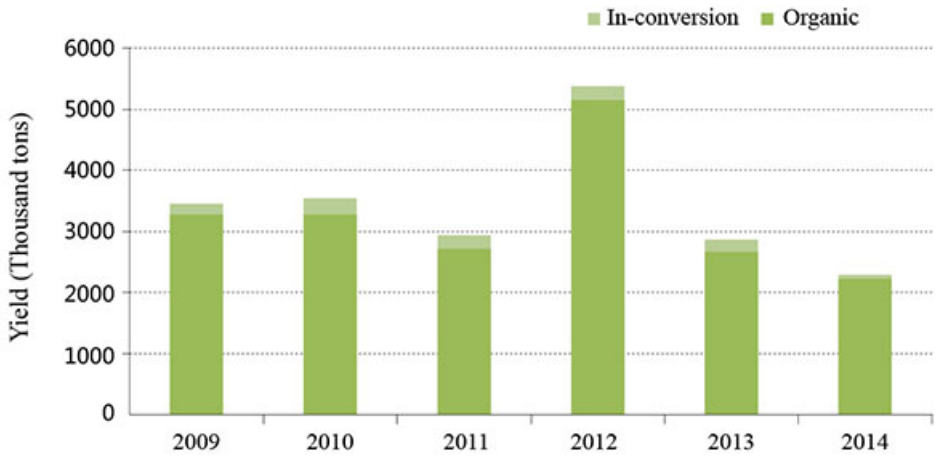


Figure 37: Yield of Chinese organic processed products during 2009-2014

Figure 37 shows the yield of Chinese organic processed products during 2009-2014. Analyzed by the yield of organic processed products, it maintained substantially in the range of 2-5 million tons. Compared with 2013, the yield of organic processed products in 2014 reduced by 580 thousand tons, with a decreasing rate of 20.3% and was mainly due to the decrease in yield of fruit & vegetable juices. In 2013, the yield of fruit and vegetable juice was 790 thousand tons, but in 2014, it was only 20 thousand tons (in 2013, organic aloe juice was produced about 750 thousand tons, but in 2014 it was not certified); and the yield of by-products of processed oilseeds decreased by 75 thousand tons. Compared with 2013, the yields of processed fodder, grounded corn and processed liquid milk or cream increased in 2014, by 149 thousand tons, 98 thousand tons and 66 thousand tons respectively. During 2009-2014, the proportion of conversion products was maintained in the range of 3.0%-7.5%.

Production of Chinese Organic Products for Import & Export

Production of Chinese organic products for import

Chinese organic products for import refer to the organic products produced and certified overseas in accordance with Chinese standards and then imported to China. As the demands for organic products in Chinese market continue to increase, more and more foreign companies want to export their organic products to China, thus the production area for certified organic products overseas is also growing.

In 2014, 10 certification bodies in total took the responsibility for foreign certification, 121 organic certificates were issued, and 66 companies were certified. Among these authorities for overseas certification, the top five ranked by the number of certificates issued were WIT Assessment, OFDC, COFCC, CQC and ECOCERT China. These 10 certification authorities conducted the organic certification in 20 countries overseas. The country with the largest number of certificates and companies was Italy, and then followed by Spain, Austria, Denmark, Australia, the USA, New Zealand, Germany and Thailand (Figure 38).

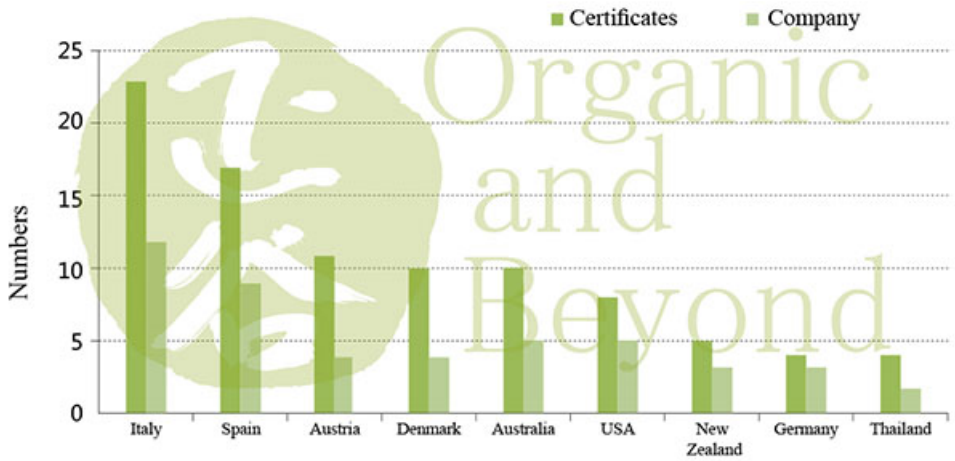


Figure 38: Distribution of companies certified and certificates issued overseas in 2014

The total area of organic products certified overseas was 265 thousand hectares, of which 181 thousand hectares was in Turkey with the certified product being pomegranate, accounting for 68.3% of the total certified area overseas; and followed by Denmark with 54 thousand hectares, accounting for 20.4%, Brazil with 20 thousand hectares (for sugar cane production), Italy with 3 thousand hectares and Spain with 2 thousand hectares (Figure 39). The total planting area with organic certification in 11 countries including France, Chile, India and others was 5 thousand hectares. Austria, Germany, the United Kingdom and Switzerland only produced processed products, without any certified organic planting area.

In 2014, the total output of organic products certified overseas was 2.499 million tons, of which Brazil had 1.532 million tons, mainly with the production of organic sugar cane, and accounting for 61.3% of the total; it was followed by Denmark with 471 thousand tons, accounting for 18.8%, with mainly dairy products; Italy, Turkey and India ranked from the third to the fifth respectively. The gross yield of organic products produced by these five countries accounted for 92.6 % of the total (Figure 39).

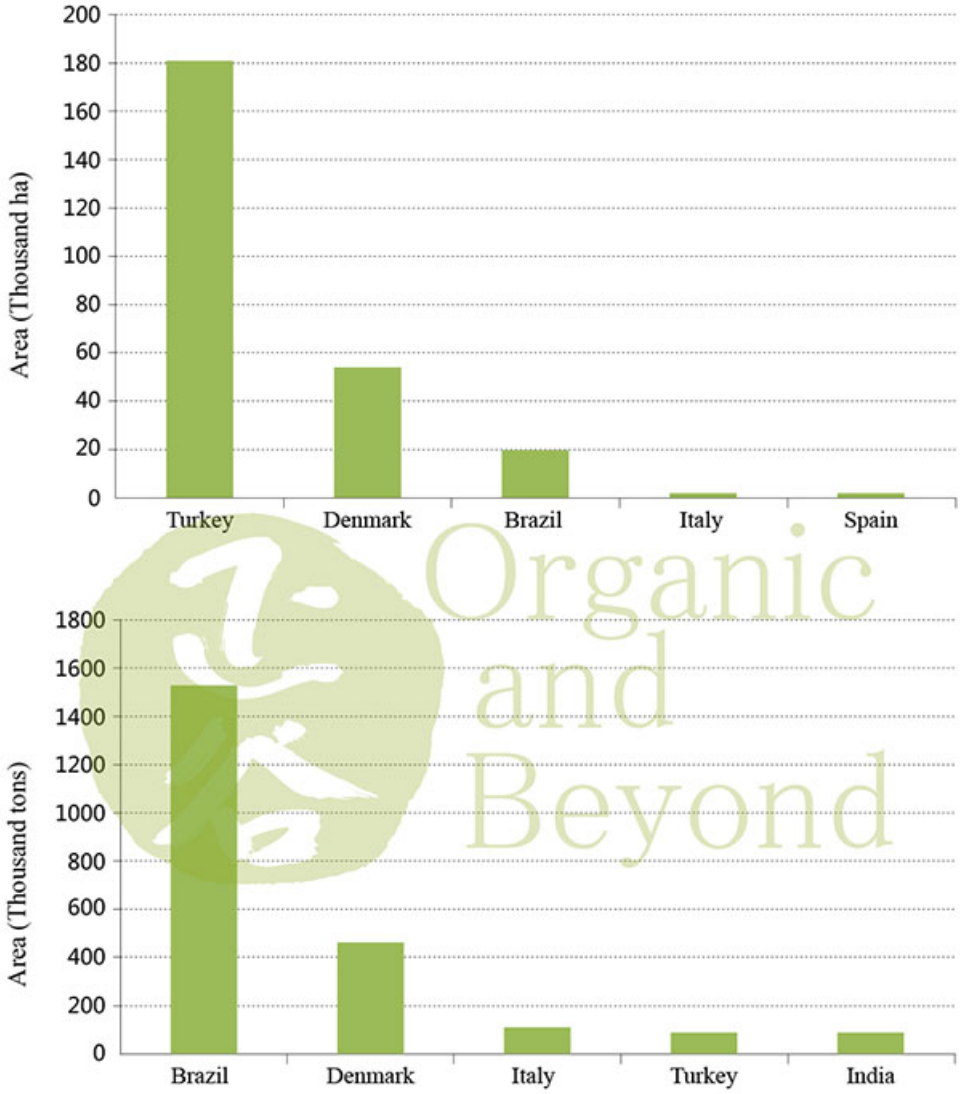


Figure 39: The top five foreign countries ranked by certified production area and yield in 2014

Table 5: Production of organic products overseas in 2014

Product	Cereals and grains	Vegetables	Fruits	Plants for sugar production	Tea	Other oilseeds	Shrimp types	Diary cattle	Processed product
Area (hectares)	655	120	185,242	21,001	106	100		57,618	
Yield (tons)	2,760	4,125	129,452	1,535,820	2,690	400	59	3368	288,994

The total area of organic products certified overseas by China was 265 thousand hectares, of which area of organic planting was 207 thousand hectares, fruit planting was 185 thousand hectares, accounting for 69.9% of the total area, farming area of livestock and poultry (pasture area of dairy cattle farming) was 58 thousand hectares, accounting for 21.8%; planting area of plants for sugar production was 21 thousand hectares, accounting for 7.9% (Table 5).

Totally 50 types of organic products were certified overseas, of which 27 types were processed products. The total output of organic products was 2.499 million tons, of which the yield of plants for sugar production was 1.536 million tons, accounting for 78.05% of the total, and the yield of processed products was 289 thousand tons, mainly for wine, vegetable oils and condiments.

Production of Chinese organic products for export

The analysis data used in this report was provided by six foreign organic certification authorities including French ECOCERT, Germany BCS, Germany CERES, Japan JONA, Brazil IBD, and Italy BAC, and it contained the information on the types, trade volume, trade amount, and exporting countries of agricultural products for export in 2014. The standard used in this section is applicable to the products which production and trade in accordance with international standards (mainly including the EU, US, Japan, Australia and other countries).

According to the statistics, there were 1,198 companies, 1,037 production bases and 698 processing plants for organic products in total, which produced the organic products and obtained the certificates in accordance with international standards; in 2014, the organic products certified according to foreign standards were mainly plant products, livestock and poultry products, processed products and aquatic products. The total area of certified organic planting was 1.1138 million hectares, of which organic certification area was 800.7 thousand hectares, and wild collection area was 328.4 thousand hectares. In 2014, the total output of certified plant products was 3.3586 million tons (58.47%), processed products 2.2754 million tons (39.62%), livestock and poultry products 107.2 thousand tons (1.87%), and aquatic products 2.5 thousand tons (0.04%).

Production of plant products

In 2014, plant products certified according to foreign standards included cereals and grains, vegetables, fruits and nuts. The total certified area was 800.7 thousand hectares, of which organic certification area was 779.3 thousand hectares (97.33%), and conversion certification area was 21.4 thousand hectares (2.67%). The total output of certified products was 3.2633 million tons, of which the yield of certified organic products was 3.1608 million tons (96.86%), and certified conversion products was 102.5 thousand tons (3.14%) (Table 6).

Table 6: Certification of plant products according to foreign standards in 2014

Types	Organic products		Conversion products		Total	
	Area (hectares)	Yield (tons)	Area (hectares)	Yield (tons)	Area (hectares)	Yield (tons)
Soybeans and oilseeds	421,470	1,437,999	11,472	15,014	432,942	1,453,013
Grains	136,526	891,173	5,661	63,646	142187	954,819

8、Pasture area

Grains	136,526	891,173	5,661	63,646	142187	954,819
Fruits and nuts	131,000	224,624	307	3,109	131307	227,733
Vegetables	49,673	420,501	323	14,729	49,996	435,230
Other plants	40,675	186,523	3,597	6,017	44,272	192,540
Total	779,344	3,160,820	21,360	10,2515	800,704	3,263,335

Among all planting crops, soybeans and oilseeds had the largest planting area of 432.9 thousand hectares, and followed by cereal and grain products of 142.2 thousand hectares, fruits and nuts of 131.3 thousand hectares. The planting area of vegetable products was 50 thousand hectares. As similar to the planting area, the yield of cereals and grains was also ranked the first, with 1.8938 million tons (56.62%); and the second was soybeans and oilseeds, with 514 thousand tons (15.37%); the third was vegetable products, with 435.2 thousand tons (13.01%). From the comparison results of data from 2013 and 2014, the planting area of other products increased slightly except that cereal and grain products had a slight decrease in the area. Overall, there were no significant changes on the total area of organic planting in accordance with international standards, remaining at around 800 thousand hectares (Figure 40).

Both in the area and yield, the plant products were mainly produced by planting, and the wild collection products had fewer proportions. The area of wild collection products was 328.4 thousand hectares, and the yield 156.6 thousand tons, of which the main products were fruits and nuts, plants for Chinese medicine, soybeans and oilseeds, and other plants.

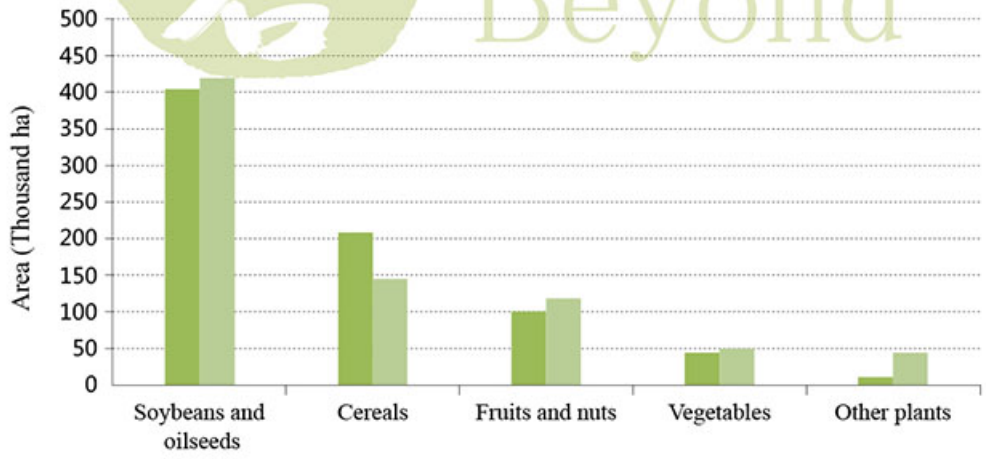


Figure 40: Planting areas of crops produced in accordance to international standards in 2013 and 2014

Livestock and poultry products, aquatic products and processed products

Table 7: Processed products certified according to foreign standards in 2014

Production of Chinese Organic Products for Import & Export

Classification code and product name	Yield of certified organic products (tons)	Yield of certified conversion products (tons)	Total (tons)
Grounded cereals and grains	475,705		475,705
Processed fodders	345,814		345,814
By-product of processed oilseeds	339,456		339,456
Processed and preserved fruits and nuts	260,677	200	260,877
Processed or preserved vegetables	241,312		241,312
Starches and starch products	167,473		167,473
Noodles and other grain & flour products	138,454		138,454
Processed liquid milk or cream	134,754		134,754
Processed oilseeds	75,134		75,134
Non-classified food	58,991	58	59,049
Fruit & vegetable juices	22,416	29	22,445
Wine, fruit wine and other brewed wine	10,269		10,269
Processed aquatic products	4,156		4,156
Other dairy products	566		566
Liquor	272		272
Natural fibers for textile	1		1
Total	2,275,449	287	2,275,736

In 2014, the total output of certified livestock and poultry products was 107.2 thousand tons, and the main certified product was cow milk, with the yield of 86.4 thousand tons, and accounting for 80.60% of the total; the yield of other livestock and poultry products was 14.8 thousand tons, mainly chicken eggs, and accounting for 13.87% of the total. The live animals were mainly goats, pigs and chickens, with the total output of more than 5000 tons. The aquatic products only have two certified products: sea kelp and seaweed, with the yield of 2470 tons.

In 2014, the organic processed products applied by China for certification according to international organic standards included 16 types, such as grounded cereals and grains, processed fodders, by-products of processed oilseeds and others (Table 7). The total output of processed products was 2.2757 million tons, of which the yield of certified organic products was 2.2754 million tons, accounting for 99.99% of the total, and the yield of certified conversion products was very low, only 300 tons.

The yield of grounded cereals and grains was the highest, 475.7 thousand tons and accounting for 20.90% of the total, and followed by the processed fodders, by-products of processed oilseeds, processed and preserved fruits and nuts, and processed or preserved vegetables. The gross yield of these five products accounted for 73.08% of the total; and the proportions of starch and starch products, noodles and other grain and flour products, processed liquid milk or cream, processed oilseeds and non-classified foods were all less than 10%, and the proportions of fruit and vegetable juices, wine, fruit wine and other brewed wine, processed aquatic products, other dairy products, liquor and natural fiber for textile were all very small, even below 1%.

Trade in Organic Products in China

Production value and trade estimation of domestic organic products

Production value of domestic organic products

Data related to production value of organic products for analysis in this chapter are also from the Information System of Food and Agricultural Product Certification in China. Each certified company reports the yield and production value of certified organic products (the estimated value assuming that all organic products are sold out) to the organic certification authorities, and then all the data collected will be unified and reported to the Information System by the certification authorities.

The organic products in China are classified into four categories: plant products, livestock and poultry products, aquatic products and processed products. The data of production value are estimated by the companies themselves according to actual situation of their products and then reported to the Information System. According to the statistics in 2014, the production value of organic products in all categories was totally 116.4 billion yuan. The production value of processed products was 75 billion yuan, accounting for 64.4% of the total, of which processed liquid milk and cream shared up to 28 billion yuan; the production value of cereals was 8.5 billion yuan, accounting for 7.3%; followed by fruits and nuts of 7.6 billion yuan, accounting for 6.5%. And the gross production value of these three above accounted for 78.3% of the total (Table 8).

Table 8: The production value of organic products in each category, 2014

Product	Organic product	Conversion product	Total	Proportion
Cereals	66	19	85	7.3%
Fruits and nuts	44	32	76	6.5%
Vegetables	29	11	40	3.4%
Soybeans and oilseeds	16	3	19	1.6%
Wild collection	18	0	18	1.5%
Tea	9	5	14	1.2%
Green fodders	3	1	4	0.3%
Other crops	13	16	29	2.5%
Livestock and poultry	64	1	65	5.6%
Other animal products	35	0	35	3.0%
Aquatic products	28	0	29	2.5%
Processed products	729	21	750	64.4%
Total	1,055	110	1,164	100.0%

Figure 41 shows the total production values of organic products in four consecutive years from 2010 to 2014, 72.83, 59.73, 81.68 and 116.4 billion yuan respectively. It can be seen from the Figure that in recent years, with the increase of organic production areas and cultivated species, the production value of organic industry was increasing continuously. Except for a decrease in 2012, both in 2013 and 2014 the values kept an increasing momentum, of which the production value in 2014 increased by more than 40% compared with 2013.

Figure 41: Change trend in output value of organic products during 2010-2014

Status of organic label registration in China

In 2012, China introduced the 17-digit organic code and established the management system of "one code for one product", which stipulated that the smallest sales package of certified products must bear an organic code. Enterprises applying for organic label and codes must provide detailed information about the name and amount of the product to be sold, and report them to the Information system through the certification authorities. In this chapter, the data related to production value of organic products for analysis are also from the Information System.

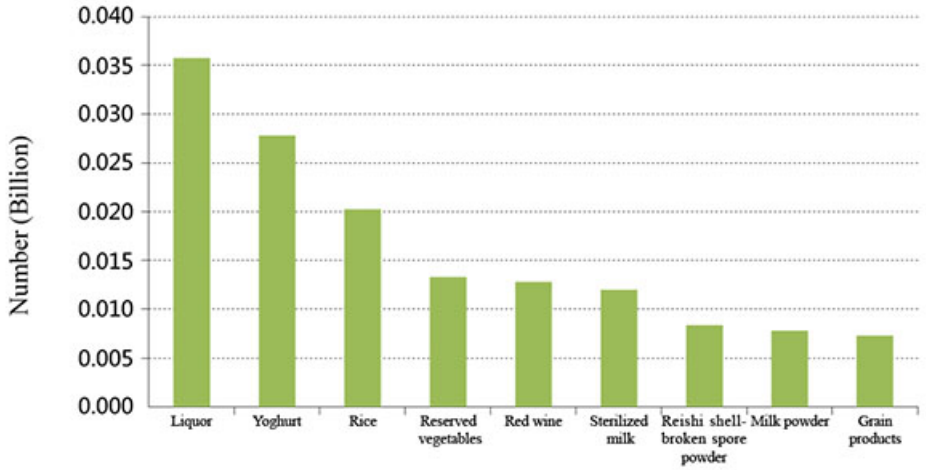


Figure 42: The top ten products ranked by the number of organic label registration in 2014

In 2014, the number of registered organic labels was 1.056 billion, of which 727 million was for milk products, accounting for 68.90% of the total. Figure 42 shows top ten products (other than milk) ranked by the number of registered organic labels in 2014. 36 million labels were for liquor (including 27 million for Guizhou Maotai), 28 million for yogurt, 20 million for rice, 13 million for vegetables and wine each, 12 million for sterilized milk, 9 million for shell-broken Reishi spore powder, 8 million for milk powder, and 7 million for grain products. The total number of registered organic labels for these ten organic products accounted for 82.8% of the total.

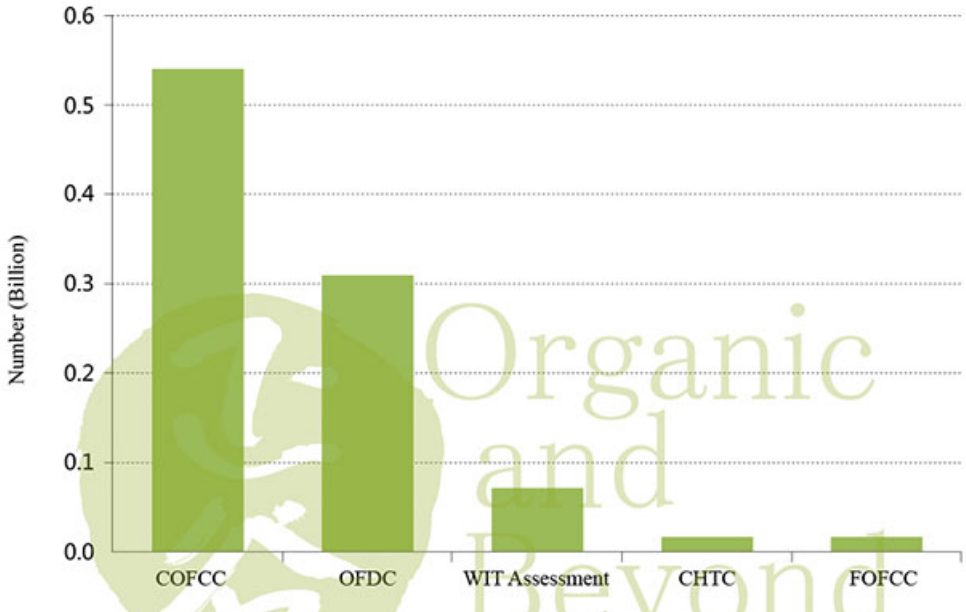


Figure 43: The top five certification authorities in China ranked by the number in registering organic labels in 2014

Among 22 organic certification authorities, the top five ranked by the number in registering organic labels were COFCC, OFDC, WIT Assessment, CHTC, and FOFCC (Figure 43). The number of organic labels registered by COFCC accounted for 51.22% of the total, with OFDC for 29.45%, WIT Assessment for 7.11%, CHTC and FOFCC for 1.92% and 1.84% respectively. And the proportions of these five certification authorities added up to 91.54%.

From a regional perspective, except for Taiwan, Macau and Hong Kong, the rest 31 provinces, municipalities and autonomous regions all had registered organic label. Inner Mongolia had the largest number of 455 million, followed by Guizhou of 35 million, Heilongjiang of 30 million, Shandong of 26 million, Guangdong of 17 million, Zhejiang, with Shanghai and other six provinces and municipalities which had more than 10 million. Besides, 13 provinces and autonomous regions including Xinjiang, Jiangxi, Jiangsu and Sichuan had the number of between 1 to 10 million; 7 provinces, municipalities and autonomous regions including Henan, Chongqing and Tianjin had less than 1 million registered organic labels.

During 2012-2014, the number of registered organic labels showed a significant trend of increase in each quarter of the years (Figure 44). The number in 2013 increased by 39.4% compared with 2012, and the number in 2014 increased by 47.9% compared with 2013.

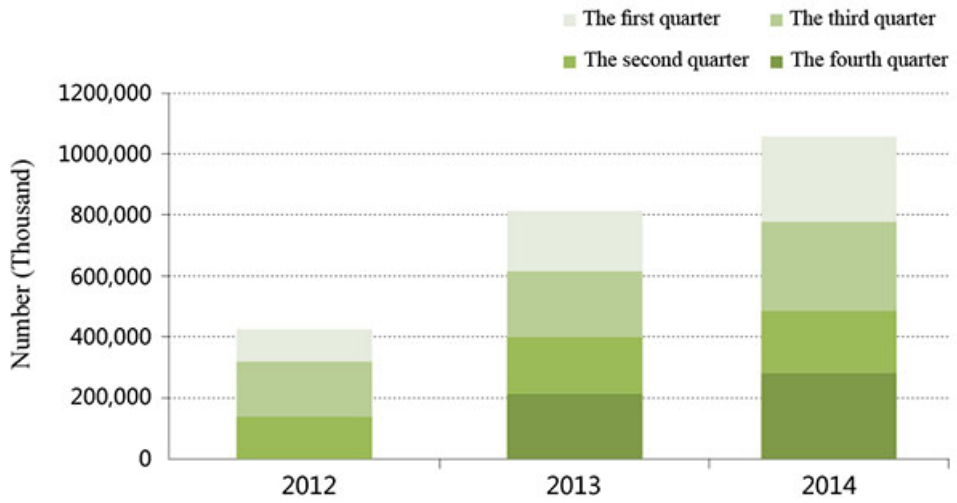


Figure 44: Changing trends in numbers of registered organic labels in China during 2012-2014

Chinese verified yield of organic products[9]

In 2014, the verified yield of organic products with registered label was 432 thousand tons, of which processed products shared 354 thousand tons, accounting for 81.9% of the total; followed by plant products of 73 thousand tons for 16.8%; aquatic products of 4 thousand tons and 1 thousand tons for livestock and poultry products. The livestock and poultry products included only eggs, while meat and meat products were involved in the statistics of processed products, of which chilled meat of livestock and poultry contributed 2 thousand tons.

Plant products

In 2014, the verified yield of plant products with registered label was 73 thousand tons, of which cereal product had 38 thousand tons, accounting for 52.2%; and followed by fruit of 20 thousand tons, accounting for 26.9%; vegetables of 12 thousand tons; the verified yield of soybean & oilseeds, nuts and other crops with registered label was very low, with only ad 264 tons for other crops (Figure 45).

The verified yield of cereals with registered label was 38 thousand tons, including 8 types such as rice, foxtail millet, and other millets. Wheat had the highest verified yield of 27 thousand tons, accounting for 70.1% of the total, followed by corn of 5 thousand tons (11.9%), foxtail millet of 4 thousand tons (10.1%), and other millets of 2 thousand tons. The verified yields of rice, sorghum, oat and barley with registered label were all less than 200 tons, of which barley only contributed 13 tons.

Vegetables products included various types of plants, thus in this section they are classified into three categories: root vegetables, leaf vegetables, and melon and fruit vegetables. The verified yield of vegetables with registered label was 12 thousand tons, of which leaf vegetables had the highest yield of 7 thousand tons (56.6% of the total), followed by melon and fruit vegetables of 4 thousand tons (31.1%), while root vegetables had the lowest yield of 1 thousand tons (12.3%).

9、The company applying for organic labels must provide detailed information about the name and weight of the product to be sold, and the verified yield discussed in this chapter is the weight reported in the application for organic labels by the company, which can represent, but is not completely equivalent to the sales volume, as the products may not be sold out in the same year.

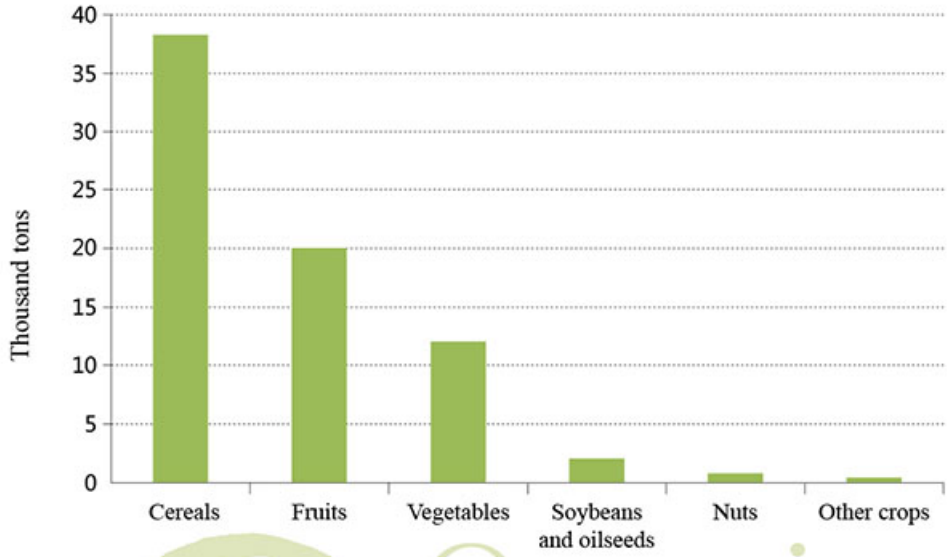


Figure 45: The verified yield of organic plant products with registered label in China during 2012-2014

In 2014, the verified yield of organic fruits with registered label was 20 thousand tons, including fruit types like pomelo, apple, melon, pear, date, etc. Pomelo had the highest verified yield of 10 thousand tons, accounting for 50.0%, followed by apple of 3 thousand tons, accounting for 14.1%. The verified yields of melon, orange, pear, date and the rest with registered label were all above 1 thousand tons. The verified yield of organic nuts with registered label was 807 tons, mainly walnuts, chestnuts and others. Among them, walnut shared 492 tons, accounting for more than half of the total verified yield.

The verified yield of soybean and oilseeds with registered label was only 2 thousand tons. And other crops, such as plants for Chinese phytomedicine and perfumery, only had a yield of 264 tons.

Livestock and poultry products and aquatic products

In 2014, the verified yield of poultry eggs with registered label was 1,401 tons, of which chicken eggs shared 1,398 tons, while duck eggs and goose eggs had 4 tons and 0.1 tons respectively.

In 2014, the verified yield of organic aquatic products with registered label was 4,400 tons, of which the yield of fish was 2,000 tons, accounting for 48.6% of the total, followed by aquatic plants of 2,000 tons, accounting for 43.8%. The verified yields of crustaceans & invertebrates and turtle were very low, with 297 tons and 40 tons respectively.

Processed products

In 2014, the verified yield of organic processed products with registered label was 354 thousand tons, of which processed liquid milk / cream had the largest yield of 191 thousand tons, ranking the first and accounting for 54.1% of the total; followed by grain mill products of 61 thousand tons, accounting for 17.2%; the yields of processed feeds and liquor were both 30 thousand tons, while other dairy products had 12 thousand tons. All processed products with a verified yield above 10 thousand tons add up to accounted for 91.3% of the total. The verified yields of processed oilseeds, and processed / preserved vegetables with registered label were both below 10 thousand tons (Figure 46).

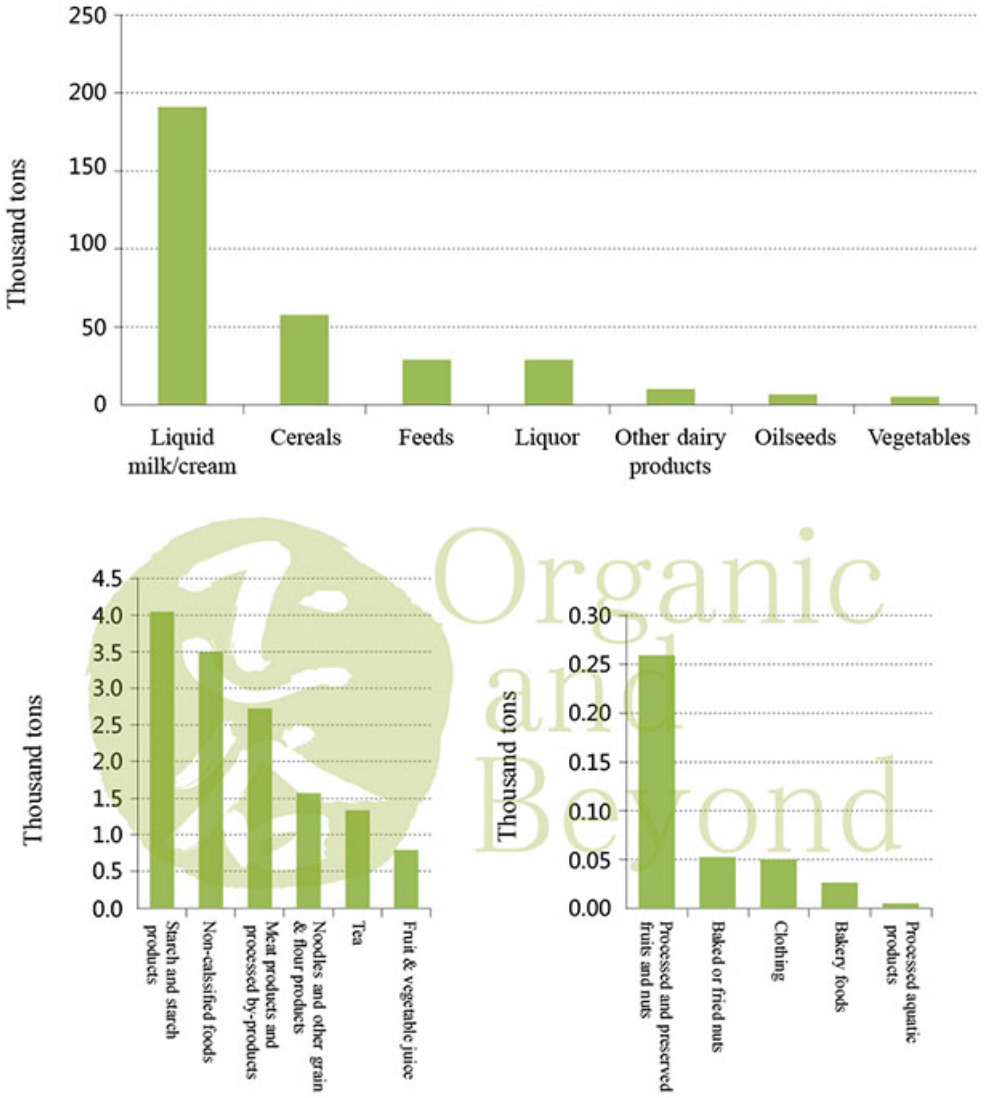


Figure 46: Verified yields of organic processed products with certificates in China, 2014

Estimation of domestic sales of organic products

The sales value of organic products is estimated with the verified yields and current prices of organic products. In 2014, the sales value of organic products was 30.2 billion yuan, of which organic processed products was 28.37 billion yuan, accounting for 93.7% of the total. The sales value of organic plant products was 1.62 billion yuan in 2014, of which fruits shared 0.59 billion yuan, accounting for 36.4%; followed by cereals of 0.39 billion yuan, vegetables of 0.31 billion yuan, and nuts of 0.23 billion yuan; the total sales value of other crops and soybeans & oilseeds was very low, adding up to only 0.09 billion yuan. The verified yield of nuts with registered label was much less than that of vegetables while they were similar in sales value, mainly because the prices of nuts such as walnut and pine nut were much higher than the price of vegetables (Figure 47).

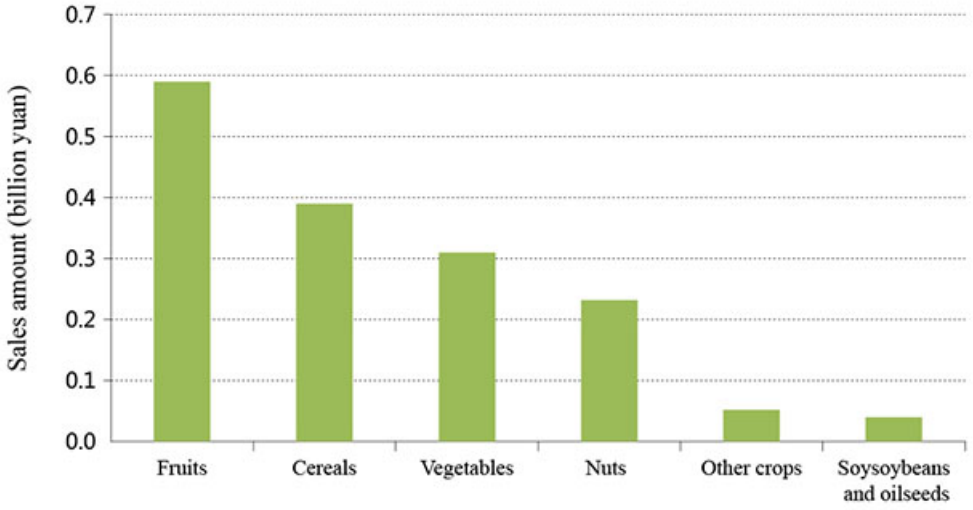


Figure 47: Sales values of various types of organic plant products in 2014

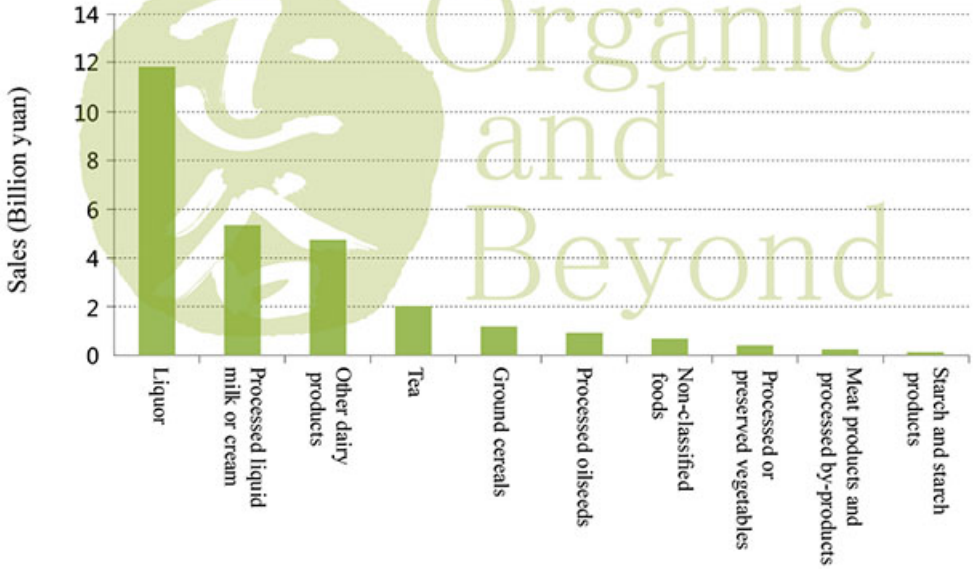


Figure 48: Sales values of various types of organic processed products in 2014

In 2014, the sales value of organic aquatic products was 240 million yuan, of which fish (freshwater and marine fish) sales was 120 million yuan, accounting for 48.5% of the total; followed by crustaceans and invertebrates of 60 million yuan, accounting for 24.8%; aquatic plants accounted for 50 million yuan, and the sales value of aquatic vertebrates (turtle) was the least, with only 10 million yuan. The verified yield of crustaceans and invertebrates with registered label was much lower than aquatic plant products. However, its sales value was much higher because of the higher price. In 2014, the sales value of animal products was 36.47 million yuan, of which 36.34 million yuan was from chicken eggs.

In 2014, the sales value of organic processed products was 28.37 billion yuan, of which 11.83

billion yuan was from liquor, accounting for 41.7% of the total; followed by processed liquid milk / cream of 5.44 billion yuan, accounting for 20.2%. Although the verified yield of processed liquid milk / cream was up to 191 thousand tons, its sales value was lower than that of liquor because its price was way lower. The products with sales value above 1 billion yuan also included other dairy products (4.8 billion yuan), tea (2.02 billion yuan), and grain mill products (1.21 billion yuan), and the sales values of these products add up to accounted for 90.2% of the total. The sales values of oilseeds, non-classified foods, processed / preserved vegetables, meat products & processed by-products, starch & starch products were between 0.1 to 1 billion yuan; and the sales values of grain flour products like noodles and processed products like fruit & vegetable juice were both less than 100 million yuan (Figure 48).

Export of organic products in China

Overview of organic product exports in China

In 2014, the total export value of Chinese organic products was $ 586 million, with a total volume of 284.7 thousand tons. In the aspect of trade amount, the processed products took up the most with $ 403 million, accounting for 68.83% of the total; followed by primary agricultural products of $ 173 million (29.48%), wild collection products of $ 7.7147 million (1.32%) and animal products of 2.1914 million (0.37%) (Table 9).

Table 9: The export values of various organic products in 2014 (thousand dollars)

Region	Primary agricultural products	Wild collection products	Animal products	Processed products	Total
Europe	103,030	890	2,190	363,960	470,080
North America	42,400	4,540	0	16,500	63,430
Asia	19,780	2,290	0	21,740	43,800
Australia	3,120	0	0	890	4,010
South America	2,530	0	0	60	2,600
Hong Kong, Macao, and Taiwan	1,710	0	0	0	1,710
Africa	60	0	0	0	60
Total	172,640	7,710	2,190	403,150	585,690

Table 10: The export volumes of various organic products in 2014 (tons)

Region	Primary agricultural products	Wild collection products	Animal products	Processed products	Total
Europe	44,496	169	411	98,381	143,457
North America	57,462	198	0	11,422	69,082
Asia	29,205	29,524	0	8,827	67,556
Australia	1,752	0	0	423	2,175
South America	1,979	0	0	0	1,979
Hong Kong, Macao, and Taiwan	409	0	0	19	428
Africa	24	0	0	0	24
Total	135,328	29,890	411	119,072	284,701

In the aspect of trade volume, the primary agricultural products ranked the first with 135.3 thousand tons, accounting for 47.58% of the total, followed by processed products of 119.1 thousand tons (41.76%), wild collection products of 29.9 thousand tons (10.51%) and animal products of 4 hundred tons (0.14%). Although the trade volume of processed products was not as much as that of primary agricultural products, its trade value was significantly higher. The trade value of organic processed products accounted for more than half of the total trade value while its trade volume also took up nearly a half (Table 10).

Export regions of Chinese organic products

In 2014, Chinese organic products were exported to more than 30 countries and regions. Most of these countries were in Europe, such as UK, Germany, Netherlands, Italy, France, Sweden, Switzerland, Belgium, Spain, Austria, Denmark; followed by Asian countries such as Japan, Korea, Singapore and Thailand; along with USA and Canada in North America and Australia and New Zealand in Oceania. Also, Chinese organic products were exported to South America, Africa as well as Hong Kong, Macao and Taiwan of China.

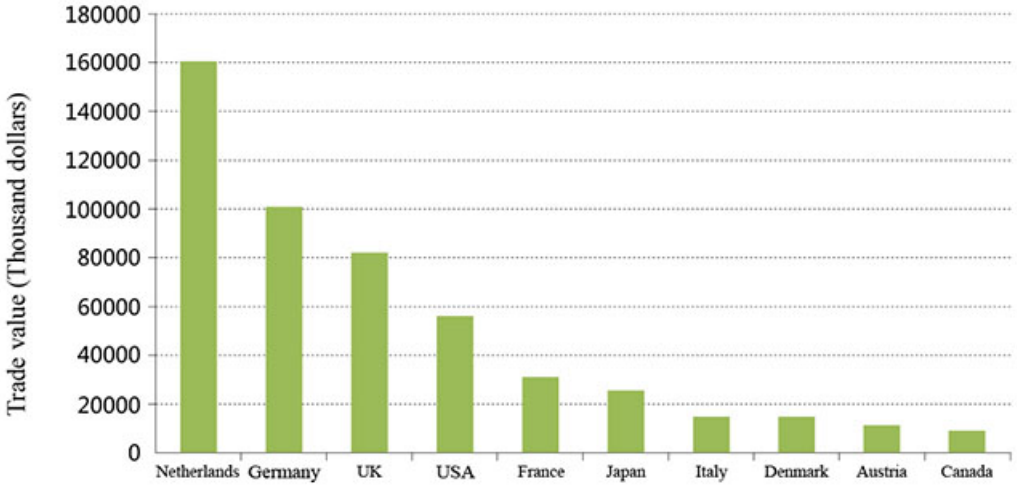


Figure 49: The top ten countries ranked by the exported value of organic products in 2014

In 2014, the region holding the largest export value of Chinese organic products was Europe, with $ 470 million which accounted for 80.29% of the total; followed by North America of $ 63.4316 million (10.83%) and Asia of $ 43.6046 million (7.45%). Among the 30 countries and regions that imported Chinese organic products, the top ten countries ranked by the trade value were Netherlands, Germany, UK, USA, France, Japan, Italy, Denmark, Austria and Canada. The total trade value of these 10 countries added up to $ 500 million, accounting for 85.55% of the whole annual export value in 2014 (Figure 49).

Europe ranked the first in the trade volume as well with 143.5 thousand tons (50.45%), followed by North America of 69.1 thousand tons (24.29%) and Asia of 67.2 thousand tons (23.64%), while the trade volume of South America, Australia, Africa as well as Hong Kong, Macao and Taiwan of China summed up to only 4.6 thousand tons. From volume perspective, the top ten countries were Japan, USA, Netherlands, Germany, UK, Denmark, Canada, Italy, Switzerland and Spain, with a total trade volume up to 256.838 thousand tons, accounting for 90.00% of the total. Japan ranked the first in trade volume but the sixth in trade value, because 86.34% of its trade volume was primary agricultural products and wild collection products (Figure 50).

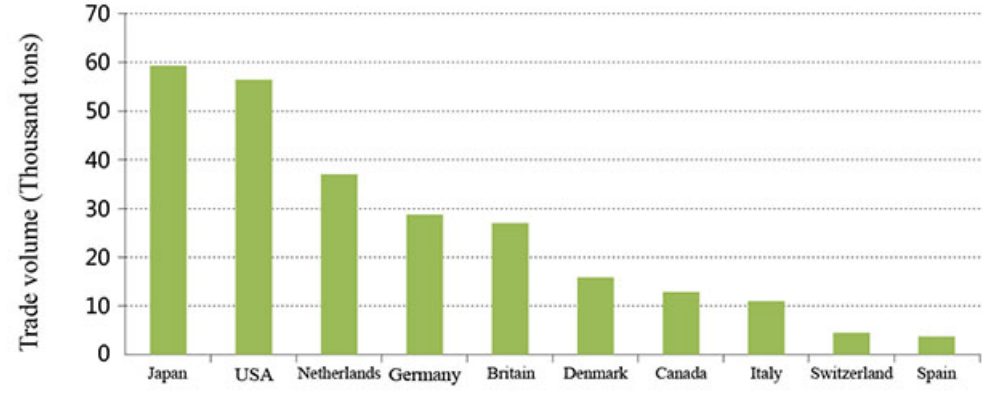


Figure 50: The top ten countries ranked by the exported volume of organic products in 2014

Quality Analysis of Organic Products in 2014

In order to implement the spirit of the National Certification and Accreditation Work Conference 2014, the quality of organic products was supervised and inspected according to the guidelines of "Focusing on quality, ensuring safety, promoting development, enhancing inspection" issued by the General Administration of Quality Monitoring, Inspection and Quarantine of the People's Republic of China (AQSIQ) and in line with the work plan 2014 of the Certification and Accreditation Administration of the People's Republic of China (CNCA) and the *Notice of CNCA on the Issue of Certification and Accreditation Specialized Monitoring and Inspection Plan* (GRF(2014) 23).

General state of quality inspection

Scope of inspected products

In 2014, with the objective of protecting people's livelihood and guarding consumers' safety, focusing on revealing the authenticity in quality and safety of certified organic products, the types of inspected products were decided according to the product list of key special campaign in food safety control conducted by the State Council in 2014, the highlights of the related monitoring and inspection plan by CNCA, former inspection results of organic product as well as monitored information of public opinions in previous years. Based on the principle of "focusing on sensitive products with high-risk and products in key regions", the following products are selected: tea and fruits which had a low or unstable qualified rate previously, dairy products, liquor and oilseeds that were subject to intensive complaints, high risk of regulation and frequent incidents, and cereals with poor certification authenticity through inspection processes in the circulation fields in recent years; highlight the sales and production concentration domains of organic products (such as the key tea production areas and demonstration areas of organic certification in Sichuan and Yunnan), trying to reflect the actual level of organic certification from multiple perspectives; verify the authenticity of products with the "ORGANIC" label in the market by keeping stressing the priority of circulation fields; introduce the inspection of organic products sold online for the first time, which helps build a solid foundation in exploring the certification and regulation modes for online platform.

As suggested above, it is planned to perform inspections in six types of products, namely cereals, tea, fruits, dairy products, , vegetable oil as well as liquor and fruit & vegetable juice, in the conventional and online circulation fields of Beijing, Tianjin, Shanghai, Jiangsu and Guangdong, which have large sales volume of organic products, as well as in the production fields of certified enterprises in Yunnan and Sichuan, and the demonstration areas of organic certification in Yanqing County of Beijing, Yang County of Shanxi and Majiang County of Guizhou.

Basis of examination and determination for inspected products

Basis of examination

Examining criteria of pesticide residues, animal residues, heavy metals, additives and illegal supplements in organic products of tea, cereals, oilseeds, fruits, dairy products, liquor, and fruit & vegetable juice were collected, sorted and summarized, generating up to 516 detecting indicators. Rapid detection of multiple pesticide residues was adopted for the samples, of which the pesticide residue detection of fruits and cereals (including liquor) went through the multi-pesticide full scan & screen method with 495 detecting indicators; while for other items risk evaluation was adopted and indicators were determined considering the higher detectable rate: 4 indicators in heavy metals, 2 in toxins, 8 in additives, 3 in GM (genetic modification) and illegal supplements.

Basis of determination

GB/T 19630-2011 *Organic Products;*

GB 2760-2011 *China National Food Safety Standard: Standard for Use of Food Additives;*

GB 2761-2011 *China National Food Safety Standard: Maximum Limit of Mycotoxins in Food;*

GB 2762-2012 *China National Food Safety Standard: Maximum Limit of Contaminants in Food;*

GB 2763-2012 *China National Food Safety Standard: Maximum Residue Limits of Pesticides in Food.*

Sampling implementation

In 2014, 319 batches of organic products in 6 types were sampled in the fields of circulation and production, in which 271 batches (85%) were from the circulation field, including 13 batches in online platform and 3 batches in import section, and 48 batches (15%) from the production field, as shown in Figure 51 below.

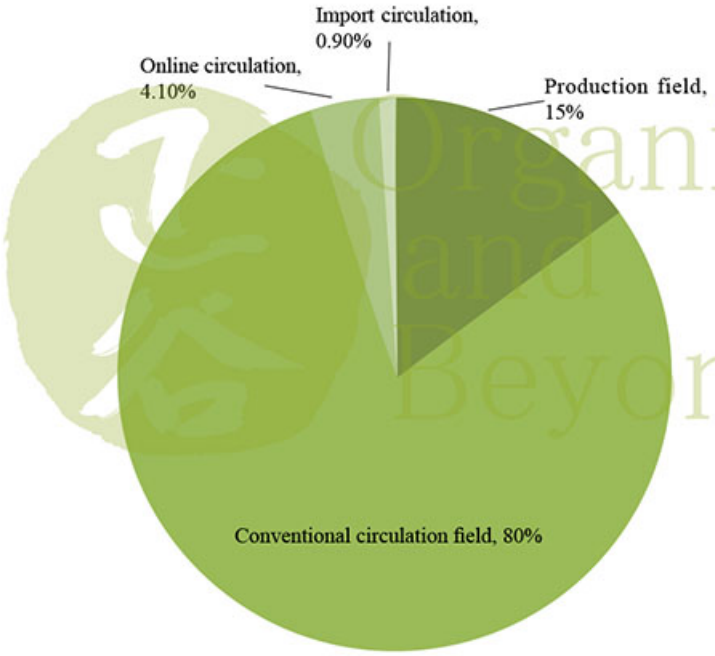


Figure 51: Distribution of sampled fields in special monitoring and inspection of organic certification, 2014

Overview of the Special Monitoring of Organic Products in 2014

The monitoring and sampling inspection in 2014 was conducted from August to November, lasting 4 months in total. 319 batches of products were sampled in the fields of circulation (including online platform) and production. Through verification, the certification of 305 batches were proven to be valid and authentic, and the qualified rate of certification authenticity was 95.6%. Among them, 273 batches with organic certification were tested with the 516 detecting indicators. 270 batches passed the examination while 3 batches failed, which were all tea products, with an average qualified rate of 98.9%. During the period of monitoring and sampling inspection, 10 cases of violation against law and regulations (Table 11) were investigated and processed, including alleged absence of

organic codes, using expired certificates and using certification labels beyond their scope. Overall, the use of expired certificates was more prominent while the organic products with valid and authentic certification proved to be reliable in both quality and safety.

The sampling inspection of organic products traded on the internet platform was conducted for the first time in 2014, aiming at verifying the quality of the organic products sold online. 13 batches of products were sampled from internet-based retailers such as No. 1 Store, Shanghai Oriental TV Shopping Co., Ltd., Tmall and Taobao, of which 3 batches were organic vegetable oil, 7 batches were organic tea and the rest 3 batches were organic fruit & vegetable juice. Among them, the certification authenticity of three batches didn't meet the requirements, including 2 batches with expired certificates and 1 batch without organic codes. The qualified rate of certification authenticity in online-trading organic products was 76.9%, lower than that of conventional sales channels. 10 batches of products were sent for examination and all of them were qualified.

The GMO contamination in cereal products was examined for the first time in 2014. 89 batches of cereal products were sampled in total and 73 batches were examined for CaMV358, NOS gene and BT gene (rice), none of which were detected in any sample.

Table 11: Violations in use of certification labels found in the circulation field

Type of product	Field of sampling inspection	Administration of implementation	Number of sampled batches	Number of processed cases in which using expired labels or labels beyond their scope were found
Cereals, dairy products, tea, fruits, vegetable oil, liquor, fruit & vegetable juice	Circulation	Administration of Quality and Technology Monitoring of Guangdong Province	50	7
		Shanghai Municipal Bureau of Quality and Technical Monitoring	50	1
		Beijing Municipal Administration of Quality and Technology Supervision	57	1
		Administration of Quality and Technology Monitoring of Jiangsu Province	50	1
Total			**207**	**10**

Inspection of certification authenticity

In the inspection of certification authenticity carried out in 2014, 14 batches of samples failed to meet the certification requirements, presenting a qualified rate of 95.6%, increasing by 10.9% compared with 2013 (84.7%). Taking a specific view on these violations, use of expired certificates took up 50% of the total, while lacking of organic codes shared 28.6%, accompanied by alleged use

of fake organic codes for 14.3 and improper use of certification labels against regulations for 7.1% respectively. The number and proportion of violation reasons are shown in Figure 52.

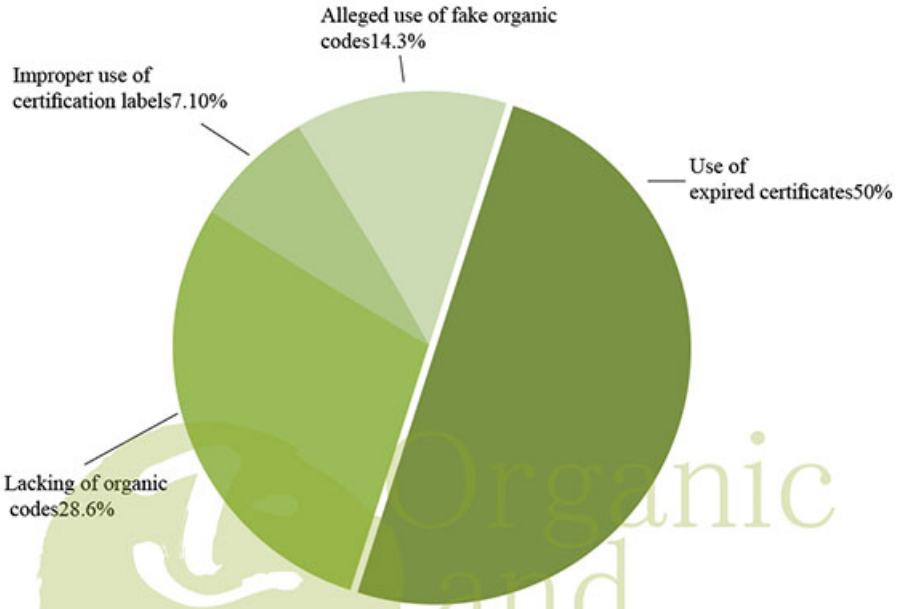


Figure 52: Distribution of reasons in certification authenticity violation of organic products

In the aspect of distribution areas in which certification authenticity violations were found, all the 14 batches that failed the examination were from circulation field (Table 12). While in the 78 batches of products sampled in the production field, all of them were qualified in certification authenticity.

Table 12: Certification authenticity violations found in the fields of production and circulation

Field of inspection	Number of sampling batches	Number of unqualified batches	Ratio
Circulation	241	14	5.8%
Production	78	0	0%

In terms of product types of samples failed in certification authenticity, among 14 unqualified organic products, 11 batches were from tea, 2 batches were from cereals, and one batch was from liquor and fruit & vegetable juice. The respective qualified rate of passed batches to the sampled batches in the three types was 85.1%, 98.0% and 97.1%. All the fruits, vegetable oil and dairy products passed the certification authenticity examination (Table 13).

Table 13: Distribution of certification authenticity in different types of organic products

Type of product	Number of sampled batches	Number of unqualified batches	Qualified rate in certification authenticity
Tea	74	11	85.1%
Cereals	98	2	98%
Liquor, fruit & vegetable juice	35	1	97.1%
Fruits	39	0	100%
vegetable oil	40	0	100%
Dairy products	33	0	100%

Judging from the origin of unqualified products in certification authenticity, the 14 sampled batches failed in this examination were distributed in Beijing, Guangdong, Jiangsu, Fujian, Heilongjiang and Guangxi, of which Fujian had the most failed batches of 6 (42.9%), with Guangxi of 3 batches (21.4%), Guangdong of 2 batches (14.3%) and Heilongjiang, Beijing and Jiangsu of 1 batch for each (7.1%) (Figure 53).

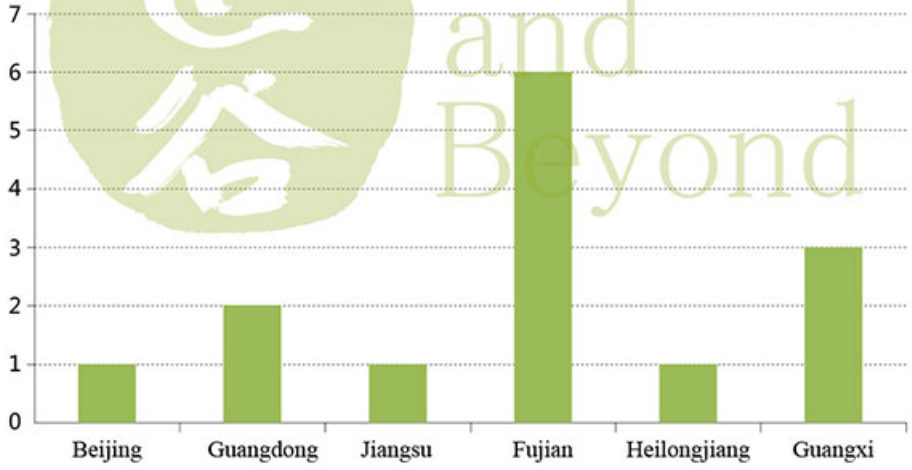


Figure 53: Origin of unqualified sampled batches in organic certification authenticity, 2014

Results of examination

Among 273 sampled batches of products, 270 batches passed the examination, with a qualified rate of 98.9%.

In terms of the fields that the unqualified products were from, 1 batch out of the three was from the circulation field, accounting for 0.4% of the total 230 sampled batches in the circulation field, and 2 batches were from the production field (enterprises of witness and inspection in Yunnan and Sichuan), accounting for 4.7% of the 43 sampled batches in the circulation field (Table 14).

Table 14: Examination of organic products in the fields of circulation and production

Field of sampling inspection	Number of sampled batches	Number of unqualified batches	Qualified rate in examination
Circulation	230	1	99.6%
Production	43	2	95.3%
Total	273	3	98.9%

In terms of types of unqualified products, all 3 failed batches were tea. In terms of origin, the 3 batches were from Sichuan, Yunnan and Fujian, 1 for each, accounting for 5.9%, 4.5% and 11.1% of the examined products in respective region. In terms of certification authorities, 2 batches were certified by Organic Food Development and Certification Center of China (OFDC) and 1 batch by Beijing Continental Hengtong Certification Co., Ltd. (CHTC), with a qualified rate of 94.9% and 96% respectively for each organization.

Selective analysis of detected pesticide residues in tea

The unqualified product found in the monitoring and sampling inspection this year was mostly organic tea mainly for the presence of pesticide residues, with three batches failing the inspection and all of them were from tea products (Table15). Two pesticide residues were detected in the three sampled batches, namely bifenthrin and chlorpyrifos. The number of pesticide types was significantly reduced compared with that of 2013; however, 100% of unqualified samples were contaminated by bifenthrin.

Table 15: Unqualified cases in sampling inspection of organic tea products, 2014

Sample name	Manufacturer	Examination result	Pesticide residue detected and content
Green tea (Huangya tea)	Ya'an Mingshan Meng-Li-Piao-Xiang Tea Industry Co., Ltd., Sichuan	Unqualified	Bifenthrin (0.11 mg/kg), chlorpyrifos (0.06mg/kg)
Yunnan black tea	Fengqing Tea Factory of Yunnan Liuda Chashan Tea Industry Co., Ltd.	Unqualified	Bifenthrin (0.03 mg/kg),
Organic Tieguanyin tea	Xinkang Tea Factory, Anxi, Fujian	Unqualified	Bifenthrin (0.12 mg/kg),

After the analyzing the results in sampling inspection of organic tea products from 2008 to 2013, organic phosphorus and pyrethroids were found to have a higher unqualified rate. Among the 23 indicators designated in the sampling inspection, acetamiprid, imidacloprid, bifenthrin, cypermethrin, decamethrin and endosulfan were main pesticide residues detected in former experience with tea products. The unqualified cases of bifenthrin and chlorpyrifos found this time also revealed the problems existing in the production section, which shows that pesticide residues is one of the high-risk indicator of organic tea products and required more attention.

In terms of distribution region, three unqualified samples were from Sichuan, Yunnan and Fujian. The organic tea produced in these regions may continue to be key targets of monitoring and inspection in the future. While continuing with enhancing organic tea the monitoring and inspection as well as examination, it is necessary to organize an expert team and conduct risk assessment along the whole organic tea industry chain of sales and production, finding out the high-risk sections to perform key supervision. Meanwhile, local quality inspection authorities should strengthen their efforts in daily monitoring, and certification institutions need to raise the examination criteria, increasing the frequency of inspection without notification and operating with a detailed scheme.

Monitoring and Inspection of Organic Products in Previous Years

Since 2008, CNCA has been organizing monitoring and inspection of organic products each year. Compared with the previous years, the qualified rates of cereals, dairy products, fruits, liquor, fruit & vegetable juice in 2014 remained constant at 100% while that of tea products increased by 7.2%. However, among the unqualified tea products found in 2014, two samples were from enterprises of witness and inspection in the production field in addition to one sample from the circulation field like past years. It can be seen that issues of organic tea products were still significant, in which the use of pesticide in cultivation bore the highest risk in the production process.

Judging from the comparison of qualified rate of sampling inspection in previous years (Figure 54), the qualified rate showed a trend of increasing and the quality of organic products remained stable.

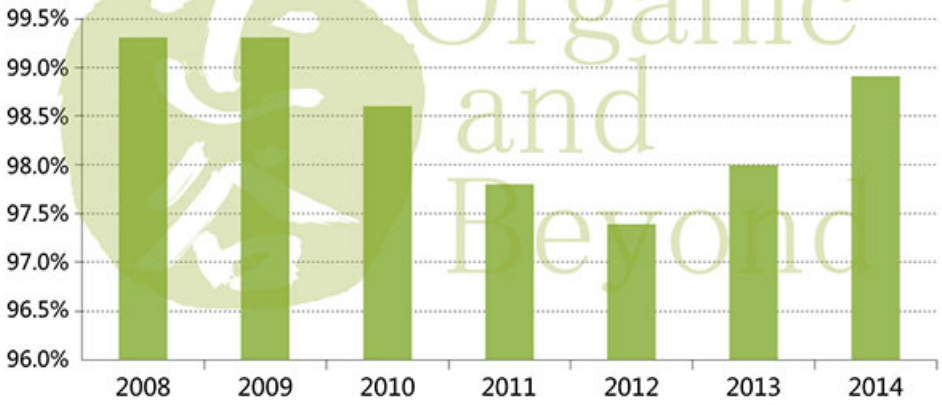


Figure 54: Unqualified rate of organic products in sampling inspection from 2008 to 2014

Quality Risk Analysis of Organic Products

Through the frequent introduction of multiple moves in innovating monitoring mechanisms and improving working efficiency carried out from 2011 to 2014, such as *Urgent Notice on Further Regulating the Certifying Activities of Agricultural Products including Organic Products* (GRZ [2011] 70), *Notice on Further Carrying Out Organic Product Certification Label Regulation Activities* (GRZ [2012] 53), *Notice of the AQSIQ,SAIC and CNCA on Further Enhancing Organic Product Regulation* (GRZ [2012] 214), CNCA has conducted a series of special inspections in organic products, including sampling inspection of certified products, witness inspection of certified enterprises and grid inspection of demonstration area. All these moves further strengthened the regulation of operations by certification authorities and enhanced the punishment dynamics against violated certification; consolidated the monitoring of certified enterprises by certification authorities; improved the cooperation among relevant functional authorities and promoted the construction of joint efforts. The validity and credibility of certification was brought to a higher level.

However, it should be noticed that there were still improper use of organic certification labels against the regulations. Enterprises who failed to pass inspections kept using organic labels, and qualified rate of certification authenticity remained low in organic products sold online. Former issues like these need to be stressed in future work. Major problems were described as follows:

Risk of using prohibited substances against regulations still existed

Products sampled from the market or production sites contain residues of prohibited substances, which indicates the enterprises of production, processing and sales need to further reduce risks in sections concerning production control, buffer area and organic integrity. High detectable rate of bifenthrin in organic tea products points out that specific biocontrol means against pests like jacobiasca formosan need to be studied. In addition to chemical pesticides, the illegal use of artificial fertilizer and herbicide should be incorporated into the scope of monitoring and inspection as well.

Illegal use of organic certification labels became significant

The illegal use of organic certification labels in the circulation field stood out: unqualified rate of certification authenticity reached up to 5.8%, in which use of expired certificates accounted for 50%, lacking of organic codes for 28.6%, alleged use of fake organic codes for 14.3% and without certified labels for 7.1%. There were 10 cases of using labels illegally revealed this year and 7 of them were concerning improper use of organic codes against regulations, mainly in tea products, which need to be stressed urgently. Also, the certification and monitoring in the circulation field should attracted attentions from other regulation authorities, who need to take their own responsibilities and get the respective job done.

Enterprises that failed in the previous monitoring and inspection continued using organic labels

This year, there was a case in which the products failed to pass the examination last year and the certificate was revoked (Anhui Yinong Tea Co., Ltd.) while organic labels were still used. It can be seen that the punishment dynamic against problematic enterprises should be further strengthened. It also reminds and urges the local authorities that while handling the violation cases, in addition to force the problematic enterprises to recall their unqualified products, they should also ask these enterprises to provide measures in disposing the labelled organic products that have already been trading in the market, and put emphasis on the monitoring of this type of products and the organizations involved.

The qualified rate of certification authenticity in organic products sold online was lower than that of conventional channels

In this year's monitoring and inspection, the certification authenticity of 76.9% organic products sold online proved to be qualified, significantly lower than that of conventional circulation and production fields. Online platforms have always been a weak point of CNCA's regulation. Strengthening efforts in monitoring and inspecting the organic products sold online in terms of certification authenticity remains to be necessary.

Analysis of Development Potential in Organic Industry of China

Comparative Analysis of Organic Product Developments worldwide

The Research Institute of Organic Agriculture (FiBL) and the International Federation of Organic Agriculture Movements (IFOAM) conducted a survey of organic agricultural statistics in 170 countries (164 countries in 2012) all over the world (FiBL & IFOAM, 2015). By the end of 2013, the area of agricultural land under organic management reached 43.1 million hectares (including the land in the conversion period) worldwide. Australia (17.2 million hectares), Argentina (3.2 million hectares) and the USA (2.2 million hectares) were the top three, followed by China (2.188 million hectares).

Compared with the area of organic production in the world in 2013 (Table16), the area of organic cereals, vegetables and beans & oilseeds in China shared around 1/5 of the total, with organic tea taking up more than 60%, which indicates the considerable percentage China accounts for in these major organic crops. However, there were large areas of green fodders, cocoa, coffee production in foreign countries, of which China has small or no area of organic production. Thus, the production area of organic crops in accordance with Chinese organic standards accounted for only 2.6% of the world.

Table 16: Percentage China accounted for in production area of major organic crops in comparison with the world, 2013

Product	China (thousand hectares)	The world (thousand hectares)	Percentage of China over the world (%)
Cereals	588	3,310	17.8%
Soybeans and oilseeds	236	1,076	21.9%
Fruits and dry fruits	211	2,276	9.3%
Green fodders	129	2,381	5.4%
Tea	53	71	74.6%
Vegetables	51	305	16.7%
Other crops	22	473	4.7%
Total	1,290	43,100	3.0%

In terms of wild collection, the production area has remained around 1 million hectares in recent years. The area of wild collection in China accounts for around 5% of the world. Obviously, with the vast territory, the wild collection still have huge development potential considering the demand of organic market.

Analysis of Potential in China's Organic Production

In contrast to the management of conventional agricultural production, organic farming doesn't simply exclude synthetic insecticide and artificial fertilizer. It is a production system that combines flexibility and strictness in the management, starting from soil management in terms of good nutrient cycling, productivity and tillage, employing comprehensive and preventative pest control operations, finally yielding organic products accredited by organic certification. It can be seen from the percentage of organic products over conventional ones that organic production in China has great development potential. Analysis will be made in terms of different organic products and regions as below.

Development potential of different organic products

In terms of percentage that organic growing area took up over the total global agricultural area, organic products accounted for an average of 1.0% of conventional production (FiBL &IFOAM, 2015). In 2013, this percentage in China was 0.95%, slightly lower than the average level of the world. The average percentage of Asia was 0.2%. Oceania ranked the top with up to 2.9%. In the ranking of all countries with data, China was the 63rd in percentage of organic growing area. 10 countries had a percentage of over 10% and 17 countries over 5%, 80% of which were European countries.

In terms of percentage that major organic crops took up over the conventional production of agricultural crops in 2013 (Table 17), the average percentage of organic cereals over conventional production was 0.4% worldwide, while the percentage in China reached 0.5%, slightly higher than the average level of the world. However, in Austria and Italy, their percentages of organic cereal growing area over the conventional area went up to 12% and 6.1% respectively, proving that there remains to be certain development potential in organic cereals production of China.

Table 17: Percentage China accounted for in major organic crops over conventional production of China and organic production in the world (%)

Product	China	World
Cereals	0.5	0.4
Vegetables	0.2	0.4
Fruits and dry fruits	1.2	3.7
Soybeans and oilseeds	1.5	0.4
Tea	2.9	3.3

In terms of vegetable production, the percentage of organic vegetable production in China was 0.2% and that of the world was 0.4%, which was not high as well. While the percentage that organic vegetable growing area took up over conventional area in Denmark was up to 21.8%, with Austria of 16.5% and Germany over 10%. As the major producer of vegetables, China accounts for nearly half of the vegetable growing area and yield of the world. Despite of the difficulties in transforming into organic vegetable production, with increasing technology investment China remains to have great potential in organic vegetable production. Especially in suburb areas, the demand is growing and the market space is expanding.

Compared with other organic products, the percentage of growing area in fruits and nuts over conventional production is relatively high. The average percentage of organic fruits was 3.7% in the world, with 1.2% in China. With largest planting areas of organic grape, French, Spain and Italy had a percentage of organic production from 8.0% to 8.5%. Countries with largest organic apple and pear growing areas such as the USA and Poland possessed a percentage of organic production from 3% to 6%. These fruits are also main fruit types produced in China. The development potential in China is huge if more technology input is invested.

The percentage of growing area in organic beans and oilseeds over conventional production in China was 1.5%, significantly higher than the average level of 0.4% in the world. This percentage could reach up to 40%-58% in Denmark and Austria. It indicates China still has a large space for improvement in the organic production of soybeans and oilseeds. Organic tea is a dominant products in Chinese organic industry, accounting for 2.9% over conventional tea products, significantly higher than other crops. Most of tea production areas are located in mountainous regions, in which the geography and climate conditions are beneficial for organic production, enabling great potential for development.

Development potential of organic industry in different provinces of China

Table 18: Percentage of organic production area in each province over respective arable land in 2013 and 2014

Region	2013	2014	Region	2013	2014	Region	2013	2014
Beijing	8.80	8.52	Inner Mongolia	0.98	1.99	Yunnan	0.48	0.41
Liaoning	2.78	2.51	Shanghai	0.97	1.01	Anhui	0.47	0.32
Guizhou	2.60	2.42	Hebei	0.76	0.60	Chongqing	0.42	0.42
Xinjiang	2.05	1.80	Shaanxi	0.73	0.56	Shandong	0.40	0.30
Heilongjiang	1.95	1.86	Tianjin	0.73	0.61	Hubei	0.36	0.38
Tibet	1.60	1.51	Guangdong	0.71	0.88	Jiangsu	0.33	0.22
Jiangxi	1.50	1.53	Ningxia	0.69	0.60	Henan	0.27	0.28
Zhejiang	1.18	1.47	Sichuan	0.66	0.60	Gansu	0.14	0.15
Qinghai	1.17	1.60	Hunan	0.65	0.77	Hainan	0.09	0.15
Jilin	1.06	0.52	Fujian	0.61	0.93	Taiwan		0.02
			Shanxi	0.56	0.38			
			Guangxi	0.53	0.38			

From the statistics above, different provinces of China possess different areas of organic production, which is closely associated with local climate conditions and agricultural development. It can be seen from the percentage of organic production area in each province over its arable land in 2014 (Table 18) that, although Beijing has a smaller organic production area of only 20,000 hectares or so, the percentage of organic production reached up to 8.8%, ranking the top of China in both 2013 and 2014 and the 12th place in the world.

Liaoning, Guizhou, Inner Mongolia, Xinjiang and Heilongjiang, which were top ranked in terms of organic production area in 2014, also had a high percentage of organic production area, which were beyond or close to 2%. While Tibet, Jiangxi, Zhejiang and Qinghai were found on the top of the list in percentage of organic production area over conventional production, especially Qinghai and Tibet, although the absolute area of organic production in these provinces were quite small.

In 2014, there were 11 provinces whose organic production area shared more than 1% over their total arable land, with 9 provinces from 0.5% to 1% and 11 provinces less than 0.5%. The organic production area (domestic area managed under Chinese organic standards) accounted for 0.83% of the total arable land. The percentages of 13 provinces exceeded this national average value.

Export Potential of Organic Products

Regardless of slowing global economic growth, the sales value of organic products worldwide remained to increase continuously. According to "Organic Monitor", the sales value of organic food products (including drinks) in 2013 reached $72 billion, with the market size increased fourfold compared with that of 1999. The major demand for organic products was from North America and Europe, accounting for 90% of the market demand worldwide. While the organic products produced in other regions, especially in Asia, Latin America and Africa, were mainly for export.

Due to the restriction of land area and climate conditions or limits in production cost, most developed countries import a considerable amount of the organic foods from developing countries for their own consumption. For instance, the UK imported a variety of organic food products every year from nine developing countries, including Brazil, India, China and Mexico. Besides, there are active organic product trades between developed countries as well. As an example, the USA exports a large amount of organic products to EU and Japan.

North American countries are major producers of organic beans, cereals, fruits, vegetables and dairy products in the world. South America produces a lot of organic olive oil, sugar, cotton, fruits, cocoa and coffee. Asian countries, mainly represented by China, Thailand, Sri Lanka and Malaysia, are major producers of organic tea, vegetables, rice, beans, nuts, coffee, spices and oilseeds. Austria and Argentina are major suppliers of organic beef. In Africa, many non-governmental organizations are helping local communities to develop organic agriculture. For example, plenty of organic cotton, fruits, vegetables and spices were exported from Egypt to Europe; Madagascar has offered a lot of organic spices and tropical vegetable oil to the global organic market; and Tanzania exported organic tea, cotton, spices and tropical fruits to Europe (CNCA, 2014).

In 2014, the total export value of organic products was $585 million in China, with a total export volume of 284.4 thousand tons. Judging from the exported organic products in previous years, beans and oilseeds accounted for the most, with around 100 thousand tons and export values of around $70 million each year, sharing 43.8%-62.7% of the total trade volume. It was followed by by-products of vegetable oil, processed / preserved vegetables, cereals and other agricultural commodities, with an export volume over 10 thousand tons each year. Processed feeds, grain mill products, processed and preserved fruits and nuts, vegetables, fruits and nuts, vegetable fat, fruit & vegetable juice and Chinese phytomedicinal herbs each had a limited export volume of 1000 to 9000 tons per year. Animal products, textile, aquatic and starchy products were exported even less, less than 1000 tons

per year.

According to the analysis above, China has a lower percentage of organic products over conventional production and certain development space in domestic and export market. Despite of various challenges in the future, the prospect of global organic food industry is promising and the domestic market will keep growing actively in China.

Issues in Data Collection and Analysis

Data of organic product certification

The data source of China's organic certification is the "Chinese Food and Agricultural Products Certification Information System" (hereinafter referred to as the "Information System") developed by the CNCA. As the platform in collecting and distributing information about food and agricultural product certification for national certification and accreditation administrations, the Information System is an important information source. The following issues were found during the process of data analysis and need to be continuously improved and perfected in the future.

Make clear distinction between cultivation and wild collection in certain crops

A clear line should be drawn between products collected from the wild and those grown in agriculture to avoid data confusion in following statistical analysis, especially for the products both cultivated and wild-collected such as edible mushroom, perennial vegetable, grape, nuts, Chinese phytomedicinal herbs. Uniform standardization should be applied to these data in certificate issue and document filing.

Match yield with production area

How to decide the production area of edible mushroom in cultivation should be unified in different certification institutions while some institutions report with "amount of substrate sacks" and others with "growing area". The upper threshold of production value per area in plant products should base on the productivity of conventional management, which should also be applied to livestock & poultry and aquatic production. Data of both growing area and yield in plant products are necessary. If there is no yield in current certain year, it should be noted. The same with livestock & poultry products. Meanwhile, the unit of the reported data should be unified while filing the document. The unit provided by the system should be adopted to avoid large deviation.

Follow the categories listed in the Organic Product Catalog while filling in the product name

In the case of data input or fetching data for statistical analysis, the categories listed in the *Organic Product Catalog* should be strictly followed to avoid confusions in name and scope of products.

Acquisition of sales data

Currently, there is no direct channel to acquire sales data of organic product. In the data analysis of 2014, we conducted a detailed analysis in the number of registered organic labels and verified yield of organic products, which had a huge difference with the statistics of organic production value. This is a big obstacle in generating the accurate information about organic products sales. The sales value can be recorded while verifying the organic product volume, which makes the sales information more credible.

Special monitoring and inspection in organic products

The sampling quantity in some product categories is insufficient

In the circulation field, markets in Beijing and Shanghai have a larger demand for organic products. In most chain supermarkets and upscale communities, organic products are available. However, due to high price and short shelf life, the stock quantity of the retailers fails to reach the lowest limit

for sampling. Especially for organic fruits, due to the characteristic of seasonality, the species and batches sampled in different periods may vary greatly. It is difficult to sample the required types and quantity in a short time. In the production field, some regions failed to complete sampling inspection as required for the same reason, either the products had been sold out or the maturity period hadn't come yet.

The coverage of producing enterprises by certification institutions is limited

Certain organic products like dairy and liquor are produced by only a few enterprises. The same enterprises and products are selected in the sampling inspection every year, which results in a lack of horizontal comparison in multiple samples. Also, the representativeness of samples inspected in the field of circulation still needs improvement. Sometimes, several samples are from the same producing enterprise. It helps in further discovering the problems if the sampling can be conducted in the production field at the same time for those enterprises who have various products in the market.

Sampling experience of online trading products is insufficient

The organic products sold online were subject to pilot sampling inspection for the first time in 2014 and 13 batches were sampled. During the process of sampling, due to asymmetric information, it is difficult for the sampling conductors to guarantee that the products sampled are produced on the same date, which presents the uncertainty in purchasing the samples.

Local quality monitoring bureaus have difficulties in conducting the sampling

During the process of sampling inspection, some quality monitoring bureaus expressed that it was difficult to undertake the sampling work: on the one hand, staff member in local bureaus responsible for the sampling work are limited and lack of experience, who require intensive training for a better performance; on the other hand, the examination authorities directly contact with sampled enterprises about the results and local quality monitoring bureaus failed to obtain the information of unqualified products information in time. The examination authorities should send a copy of examination report to the local bureaus who conducted the sampling so that they can deal with the unqualified enterprise timely afterwards.

About Beijing Organic and Beyond Corporation

Founded in 2007, as a whole value chain supplier, Beijing Organic and Beyond Corporation (OABC) has achieved a fast growth and become a leading organic food company in China. OABC is committed to organic agriculture, respect the value of life, advocate and promote the healthy, moderate and sustainable life style, and support more and more people to share good life.

OABC has successively provided the organic foods to more than 500,000 families with home delivery service in Beijing, Tianjin, Shanghai, Hangzhou, Guangzhou, and Shenzhen in China since 2007.

The team of OABC organic techniques consists of OATC (Organic Agricultural Technology Center) , Product Bases Dept., Global Sourcing Dept., Organic Food Research Center and Quality Control Dept. To guarantee the implementation of OABC Quality Control System, OATC employs more than 30 staff with master degree or doctor degree in agronomy, edaphology, ecology, tea science, horticulture, zootechnics, aquaculture science, seeds science and pest control study. OATC translated *the World of Organic Agriculture* into Chinese to introduce update data to people who are interested in organic sector for five successive years, which not only achieved significant social effects, but also built a bridge between China and the world.

Health, Ecology, Fairness and Care, the four principles of IFOAM, of which OABC is proud to be a member, are also the guidance integrated in our every-day hard working. We hope through our free organic food home delivery service more people have the opportunities to enjoy healthy food and are willing to take the responsibility to preserve our motherland.

Organic and Beyond

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