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# International Comparison of the Export Competitiveness of Chinese Honey

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**Abstract** Honey production and trade in the world are introduced. Total output of honey shows an increasing trend while the output of Chinese honey always ranks the first in the world. China, Argentina, Mexico are the major exporters of honey. In the year 2006, honey exports of China, Argentina and Mexico occupy 49.9% of the world's total export volume. International competitiveness of the three honey export countries are calculated, compared and analyzed by adopting the indices such as export price, international market share, and Revealed Comparative Advantage (RCA) index. Result shows that honey price of Mexico is significantly higher than the world's average level, that of Argentine is close to the world's average price, and that of China is a more stable price far below the world level. Thus, Chinese honey has significant competitive advantage. According to the international market share, after entering of 21st century, honey export of China has occupied a relatively large percentage of the world's export but shows a downward trend; Argentina has increased rapidly along with the enhancement of market share; while honey export of Mexico has no obvious advantages in market share. According to the RCA index, honey exports are bigger than 1 in China, Argentina and Mexico, indicating that the three countries have competitive advantages in honey exports. Among them, Argentina has significantly bigger index than Mexico and China. Affected by international trade barriers, competitive advantage of China is relatively the weakest. Based on this, corresponding suggestions are put forward: protect and consolidate the advantages of traditional market and implement a diversified export strategy; improve the honey production, supply, and marketing models of honey, and change the pursuit for short-term interests and quantity growth; and adopt various measures to cope with international trade barriers.

**Key words** Honey; International competitiveness; Export; China

Apiculture, a traditional feature industry and a typical export-oriented industry, has a long history in China. The numbers of honeybee, product output, and export volume of China all rank the first in the world. Export of honey from China to more than 60 countries and regions accounts for about 25% of the world's total annual honey export with the annual foreign exchange earnings of about 100 million U. S. Dollars. However, with the deepening of trade liberalization and the growing of international trade activities, international competition of honey trade has also become increasingly fierce. Therefore, analyzing and comparing the export competitiveness of honey between China and other leading exporters have important practical significance to understanding the situation of China's honey exports, promoting the stable development of China's apiculture, and increasing the income of farmers.

## 1 Honey production and trade of the world

**1.1 Honey production of the world** According to the 2006 *China Agriculture Yearbook*, there are more than 30 countries with relatively more swarms. Among them, the top ten countries are China, Turkey, Russia, Iran, Ethiopia, Argentina, Tanzania, the United States, Kenya, and Spain. In recent years, number of swarm of these ten countries almost accounts for about 58% of the total number around the world. And China always takes the first place with about 12%.

Honey output in the world is 960 thousand tons in the

1980s, 1 100 thousand tons in the 1990s, and more than 1 200 thousand tons after the year 2000, showing a trend of stable growth year by year<sup>[1]</sup>. In the year 2006, world's total output of honey reaches 1 438.3 thousand tons, an increase of 49.8% compared with the 1980s. Countries with more than 50 tons of annual honey output are mainly China, Turkey, Argentina, Ukraine, United States, Mexico, Russia and India. Honey output in China has ranked the first in the world, accounting for about 20% of the world's total output since the year 2002.

**1.2 Honey trade of the world** Among the world's major beekeeping countries, China, Argentina and Mexico are the major export countries of honey. From the year 1995 to 2006 (except 2005), the top three export countries of honey are always China, Argentina and Mexico. In the year 2006, honey exports of China, Argentina and Mexico occupy 49.9% of the world's total export volume of honey, accounting for 26.89%, 130.00% and 45.56% of their outputs, respectively. Thus, this paper selects Argentina and Mexico as the comparative objects in order to study on the status and trend of export competitiveness of Chinese honey.

## 2 Measurement and comparison of international competitiveness of honey in major exporting countries

**2.1 Analysis on international competitiveness of export price** Price is an important factor affecting the international competitiveness of products. In the same target market, products with low export price have stronger competitiveness, if the

products of two exporting countries have no great differences and importing country does not adopt differential tariff<sup>21</sup>. This paper analyzes the competitive advantage and changes of prices of different countries in the international market by comparing the export price of major exporting country to the world's average price.

Export price of honey in China has significant competitive advantage. Table 1 indicates that since the 1990s, world's export price of honey has shown an increasing trend. Honey export prices of China, Argentina and Mexico are all lower than the average price of the world. On the whole, export price of China is the lowest, followed by Argentina. Honey price of Mexico is the highest; and honey prices in the years 2002, 2003 and 2004 exceed the world price. Price difference between China and the world is gradually expanding. Difference in

price reaches 1 116 U. S. dollars in the year 2004, which is 50.36% of the world price. In the year 2006, export price of Chinese honey is only 69.1% of the world's average price, a difference of 591 U. S. dollars. Price of Argentina fluctuates the greatest, but its overall price is still slightly higher than the price of China. Before the year 1995, export prices of the three countries are almost the same. However, after the year 1995, especially after entering the 21st century, differences in prices become increasingly evident. Honey price of Mexico is significantly higher than the world's average level, that of Argentine is close to the world's average price, and that of China is a more stable price far below the world level. For a long time, a lower price is the main reason for China to maintain a leading status in honey export in the world.

**Table 1 Comparison of honey export price of China, Argentina and Mexico**

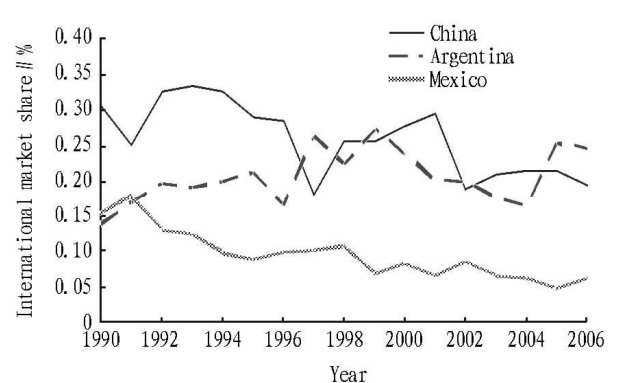
U. S. Dollars/t

Year	Average export price of world(A)	China		Argentina		Mexico	
		Export price	Price difference with A	Export price	Price difference with A	Export price	Price difference with A
1990	1 108	884	-223	776	-332	851	-257
1991	1 138	949	-184	907	-231	973	-165
1992	1 181	920	-258	938	-243	1 024	-157
1993	1 054	760	-289	912	-142	935	-119
1994	1 042	767	-272	861	-181	922	-120
1995	1 353	1 041	-308	1 109	-244	1 181	-172
1996	1 665	1 378	-284	1 679	14	1 423	-242
1997	1 686	1 433	-247	1 539	-147	1 528	-158
1998	1 485	1 099	-383	1 296	-189	1 280	-205
1999	1 256	901	-355	1 028	-228	1 125	-131
2000	1 166	843	-316	986	-180	1 119	-47
2001	1 235	925	-305	979	-256	1 225	-10
2002	1 715	1 055	-655	1 427	-288	1 887	172
2003	2 356	1 257	-1 097	2 268	-88	2 716	360
2004	2 248	1 125	-1 116	1 927	-321	2 456	208
2005	1 697	1 023	-664	1 194	-503	1 673	-24
2006	1 911	1 320	-591	1 482	-429	1 899	-12

Note: Data are from the statistical data of FAO. Data of China in the table only refer to the mainland.

**2.2 Analysis on international market share** Market share is the most simple and direct index reflecting the competitiveness and competitive position of a product in the market. Competitiveness of a product in a given country is ultimately manifested in market share. Generally, international market share has always indicated the competitiveness of a product.

According to the world market, Chinese honey shows a downward trend in export market share after entering the 21st century. Fig. 1 illustrates that before the year 2002 (except for a few years), market share of Chinese honey ranks the first (more than 25% of export volume) in the world with absolute superiority. But in 2002, China has encountered a green barriers in the European Union, so that the market share of China fluctuates greatly. Exports have suffered heavy losses in the year 2002 and market share reduces to only 18.95%, which is 0.66 percentage points lower than Argentina. Honey export of Argentina has increased rapidly after the 1990s, along with the enhancement of market share. In the years 2005 and 2006, market share of Argentina exceeds that of China, showing a strong export momentum. However, honey export of Mexico has no obvious advantages in market share.



**Fig. 1 International market share of honey export of China, Argentina and Mexico**

Chinese honey has an absolute advantage in the Japanese market. During the international honey trade, the United States, Japan and the European Union are the three main importing countries and regions. The United States and Japan have always been the major consumption markets of Chinese honey, followed by the European Union. Due to the difficulties in data collection, this paper analyzes only Germany on behalf

of the EU market.

Table 2 indicates that market share of Argentina is the highest in the United States in the year 2001. This is mainly because that the United States has increased its imports of Argentine honey after the sign of anti-dumping " suspension agreement" on honey between China and the United States in 1995. China's U. S. market share is relatively small, but is still

significantly higher than Mexico. In German market, Mexico has bigger market share than China; and Argentina has the highest market share. However, in the market of Japan, China has dominated the honey market. Japan's annual import of honey from China accounts for 90% of the total honey import; and China's export to Japan accounts for more than 40% of the total honey exports.

**Table 2 Proportion of honey imported from China, Argentina and Mexico**

Import country	The year of 2001			The year of 2005			%
	From China	From Argentina	From Mexico	From China	From Argentina	From Mexico	
The United States	27.16	31.14	6.45	32.02	24.69	1.58	
Germany	12.43	30.10	14.22	1.51	39.25	10.32	
Japan	89.98	5.19	0.28	90.84	4.28	0.27	

Note: Data are from the statistical data of FAO. Data of China in the table only refer to the mainland.

In the year 2005, major changes have taken place in the pattern of honey trade. China's honey export continues to maintain the dominant position in market share of Japanese market. At the same time, according to the new anti-dumping policy in the U. S. market, honey exporters in China adopt a unified coping strategy, ensure the export business of honey, maintain the first place of honey export to the United States, and show a stable competitiveness. Though the EU cancelled the ban on Chinese honey at the fourth quarter of 2004, market recovery is still slow due to the impact of chloramphenicol residues event. In the year 2005, honey imported from China is only 1.51% of the total export volume of Germany, a decrease of 11 percentage points compared with that of 2001.

**2.3 Analysis on Revealed Comparative Advantage index** Analysis on market share shows the trade achievement of a particular market, but market share may not provide adequate information when comparing the countries with different economic scales. To compensate for this shortcoming in market share, Revealed Comparative Advantage (RCA) index can be used to measure the market share of a product in a given country. The equation is

$$RCA_{ij} = \frac{X_{ij}/X_{it}}{X_{wj}/X_{wt}}$$

where  $RCA_{ij}$  is the RCA index of export product  $j$  in country  $i$ ,  $X_{ij}$  is the export value of product  $j$  in country  $i$ ,  $X_{wj}$  is the total export of product  $j$  in the world,  $X_{wt}$  is the total export of all products in the world. Generally speaking, if the value of  $RCA_{ij}$  is bigger than 1, the RCA may exist in product  $j$  in country  $i$ . Bigger value of  $RCA_{ij}$  indicates the stronger international competitive advantage of product  $j$ , and vice versa.

Table 3 shows that RCA indices of honey export are bigger than 1 in China, Argentina and Mexico, indicating that honey exports in the three countries have competitive advantages. But there are gaps among the RCA indices of these countries. Argentina has significantly larger index than Mexico and China and has remained stable with significant competitive advantage. But Mexico is slightly larger than China, and the two countries have shown a downward trend.

Among the three countries, China's competitive advantage is the weakest. What's more, affected by the trade barriers in developed countries, RCA index shows significant change in the relevant years. For instance, due to the anti-dumping " suspension agreement" of honey between China and the United

States, both quantity and price of honey exports from China to the United States have been restricted<sup>[3]</sup>. RCA index of honey export reduces from 5.63 in the year 1992 to 2.73 in the year 1997. Especially after the ban of EU in the year 2002, RCA index has begun to slip from 3.50 in the year 2001 to only 1.34 in 2006, which is a far cry from Argentina, and lags behind Mexico with weak competitive advantages.

**Table 3 Revealed Comparative Advantage index of honey export of China, Argentina and Mexico**

Year	China	Argentina	Mexico
1990	6.556 036	27.121 57	15.025 460
1991	4.828 918	38.543 75	19.525 310
1992	5.630 271	46.996 82	14.925 420
1993	5.077 278	46.740 33	13.695 630
1994	4.699 521	43.581 49	10.348 950
1995	4.322 695	41.737 97	7.813 106
1996	4.542 480	35.871 60	8.763 615
1997	2.728 331	49.280 97	7.567 644
1998	3.533 120	40.203 97	7.740 301
1999	3.277 627	54.102 43	4.595 166
2000	3.166 500	48.396 83	5.845 848
2001	3.503 862	37.485 44	4.791 324
2002	1.619 958	41.085 41	7.261 690
2003	1.420 453	42.140 93	6.141 368
2004	1.259 829	36.697 07	5.980 422
2005	1.404 994	46.306 31	3.938 208
2006	1.336 434	48.858 98	5.155 999

Note: Data are from the statistical data of FAO. Data of China in the table only refer to the mainland.

### 3 Conclusion and suggestion

(1) China's honey export has certain competitive advantages. However, competitiveness is not strong compared with other big export countries. Although the international market share of China retains a significant proportion, market share of Argentina has increased rapidly. Especially in the markets of the United States and the European Union, including Germany, and other developed countries and regions, Argentina has posed a great threat to China. Honey export of China has certain comparative advantage, but is relatively weak compared with other countries. According to the comprehensive comparison of competitive indices, Argentina is the biggest competitor to China. Thus, to improve the comparative advantage of hon-

ey export in China, Argentina's honey export must form a strong competitive situation. To achieve this, China must further find out the honey production, acquisition, processing, export and other important links of Argentina, learn from their advantages and further exert its own comparative advantages<sup>[4]</sup>. Meanwhile, competitiveness of China's honey export should be improved greatly. On the one hand, protect and consolidate the advantages of traditional market; on the other hand, make efforts to exploit Latin America, Oceania, Africa, and other markets, and implement a diversified export strategy.

(2) Export competitiveness *RCA* of Chinese honey shows a declining trend. Honey export should seek for non-price competitiveness including quality, management and marketing. Chinese honey has a comparative advantage in export mainly due to its significant price competitiveness. However, low price may easily lead to anti-dumping, as well as the excessive preoccupation with quality. In fact, low export price of Chinese honey is because that honey exported is mainly low-end product. Besides, Chinese honey is mostly immature honey, which is impossible to sale at a price as high as the maturity honey in Argentina. Therefore, based on the long-term interests and the quality efficiency, we should improve the honey production, supply, and marketing models of honey, and change the pursuit for short-term interests and quantity growth.

(3) Export competitiveness of Chinese honey is greatly affected by the international trade barriers. From the above analysis we can clearly see that international market share and *RCA* indices have greatly reduced at the years encountering trade barriers. Therefore, to ensure export and improve export competitiveness, Chinese honey must adopt various measures to cope with international trade barriers.

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## 中国蜂蜜出口竞争力的国际比较

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**摘要** 介绍了世界蜂蜜生产和贸易的概况。世界蜂蜜总产量呈逐年稳步增长的趋势,中国蜂群数量和蜂蜜产量一直以来稳居世界首位;中国、阿根廷、墨西哥是蜂蜜主要出口国,2006年,3国蜂蜜出口总量占世界蜂蜜总出口量的49.9%。通过出口价格、国际市场占有率、显示性比较优势指数等指标对中国、阿根廷、墨西哥三大蜂蜜出口国蜂蜜国际竞争力进行了测算和比较分析。结果表明:从出口价格来看,墨西哥蜂蜜价格大大高于世界平均水平,阿根廷蜂蜜价格与世界平均水平较接近,中国的蜂蜜价格则远远低于世界平均水平,中国蜂蜜具有明显的竞争优势;从国际市场占有率来看,21世纪以来,中国蜂蜜出口所占绝对份额较大,但市场占有率呈下降趋势,阿根廷蜂蜜出口增长迅速,市场占有率上升较快,而墨西哥蜂蜜出口在世界市场份额优势不明显;从显示性比较优势指数(*RCA*)来看,中国、阿根廷、墨西哥的蜂蜜出口*RCA*值均大于1,说明3国的蜂蜜出口均具有竞争优势,其中,阿根廷的*RCA*值显著大于墨西哥和中国,中国受国际贸易壁垒的影响最大,竞争优势相对最弱。基于此,提出了相关建议:保护和巩固传统市场优势,实施多元化出口战略;改善蜂蜜产、供、销模式,改变追求短期利益的数量增长方式;采取积极措施应对国际贸易壁垒。

**关键词** 蜂蜜;国际竞争力;出口