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China, Peoples Republic of

Fresh Deciduous Fruit

Fresh Deciduous Fruit Annual

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Approved by:
Dr. Sam Wong
U.S. Consulate General Guangzhou, Agricultural Trade Office
Prepared by:
John D. Rutledge

Report Highlights:
China's deciduous fruit production is mixed for crop year 2001-2002. While pear and grape production will increase, apple production will decline by a small amount. Apple acreage is expected to decrease again this year. China's deciduous fruit exports continue to rise, but imports are increasing too.

Includes PSD changes: Yes
Includes Trade Matrix: Yes
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Executive Summary

China's deciduous fruit production situation is mixed for crop year 2001-2002. While the grape and pear harvest should be larger than last crop year, apple output should slightly decline. Post estimates that apple production will decrease by two percent to 20.05 million tons, but grape production will increase by 16 percent to 3.8 million tons, and pear production by five percent to 8.82 million tons.

Chinese fruit consumption has remained relatively steady, thanks to low prices. However, though prices for domestic fruit are still low, they have had only a minimum impact on production. Some acreage conversion out of deciduous fruit is occurring, as evidenced by another year of lower apple acreage, and could lead to major production decreases sometime in the future. Grape acreage is growing and pear acreage has started to grow again. While the overall processing rate for deciduous fruit continues to hold steady at approximately ten percent, grape processing is showing increases, particularly for the production of wine.

China still exports far more fresh deciduous fruit than it imports, except in the case of grapes. Grape imports surpassed exports as during the previous year. During this marketing year, unlike last year, Hong Kong re-exports of apples, pears, and grapes to China were higher than official imports.

Although China's distribution and storage infrastructure for fruit has improved over the last several years, post-harvest technology gaps remain and allow the country to continue as a good market for some varieties of U.S. fresh deciduous fruit.

General

Official data on China's deciduous fruit production covers apples, grapes, and pears. China's national production and acreage estimates currently are released on a more timely basis than in the past, but the release of provincial estimates is often delayed. Official preliminary national crop estimates for the year 2001 will not be released until later in the year, after the harvest has finished. Data for select provinces and localities for the year 2000 is currently available, but the most complete set of national and provincial data covers the year 1999.

Official data on tree numbers does not exist. Estimates are difficult to construct, because the vast majority of China's fresh deciduous fruit is grown by individual growers on small parcels of land. Estimates in this report are based on interviews with industry participants and random orchard measurements from the major growing areas.

Estimates of China's imports are based on the country's official customs statistics and Hong Kong re-export statistics. Overall, China is the main recipient of Hong Kong re-exports of fresh deciduous fruit. Although Hong Kong's data gives a good indication of the value and volume of China's actual imports, they are not a perfect indicator. A portion of products that list Hong Kong as a final destination is also known to end up in China. Since this trade tends to be unaccounted, the amounts and values going to China in this fashion are difficult to calculate.

China's official currency is the Renminbi (RMB), also known as the Yuan. The Yuan's sub-denominations include the Jiao, 10 Jiao equal one Yuan, and the Fen, 100 Fen equal one Yuan. All Chinese prices are converted into U.S. Dollars at the exchange rate of one Dollar equals 8.27 Yuan. The exchange rate between these two currencies has remained near this level for the last several years.

Production

China's apple production for the crop year 2001-2002 will slightly decrease, while pear and grape production will increase. Post estimates that apple production will decrease by two percent to 20.05 million tons, grape production will increase by 16 percent to 3.8 million tons, and pear production will increase by five percent to 8.82 million tons.

Causing the decline in apple production is the continuing decrease in acreage, but also inclimate weather conditions in the eastern part of China. Although weather conditions for apples this year were generally fine in the western and southern growing regions of China, off-setting any production increases in these areas was the hot and dry summer weather in Hebei, Liaoning, and Shandong provinces and also prolonged cold weather during the spring in Shandong. The hot and dry weather reduced the yields of younger trees and the prolonged cold snap reduced tree bud numbers in Shandong province. Contributing most to pear production was expanded production in the southern part of the country. While for grapes, the local wine industry's growing demand for raw materials helped spur on grape production.

In 2000, according to China's official statistics, apple production declined to 20.43 million tons, but pear production rose to 8.4 million tons and grape production increased to 3.28 million tons. Apple acreage during that same year was 2.25 million hectares, pear acreage 1.01 million hectares, and grape acreage 283 thousand hectares. As with production, apple acreage fell in comparison with the 1999 figures, while pear and grape acreage rose.

Most of China's deciduous fruit is grown by many individual growers on small parcels of land. The average amount of land each grower devotes to growing fruit is a couple of *mus* or less, one mu equals approximately one-fifteenth of a hectare. More successful growers often manage a greater amount of acreage, usually three to eight mus. Large commercial or government owned orchards with acreages in the hundreds of hectares are rare.

As with many of China's citrus groves, some deciduous fruit orchards are affected by alternating small-big crop year production cycles, particularly apple orchards. However, this cycle seems to be most prevalent in apple growing areas under poor management and use limited to no cultivation technology. One Shandong province source claims that his province's apple growing was affected by such a cycle until about 10 years ago. Improved orchard management and the introduction of certain growing technologies caused this cycle to disappear, but this cycle still occurs in other places in China, i.e. Jinzhou County, Liaoning province. However, these cycles are not as pronounced as with citrus growing in China.

The majority of China's deciduous fruit is harvested between the months of June and November, but the harvest seasons for specific fruits is much shorter. In comparison with years past, the harvest seasons for each type of deciduous fruit are becoming longer, but for each fruit type harvest extension is occurring in each's own unique way. The bloom period for most apples and pears in China is April and for grapes May. In the southern deciduous fruit growing areas, blooming and harvesting sometimes begin a week or more before the north.

The apple harvest season in China starts in August and continues until November, but much of the actual harvesting occurs in October. To extend the season or at least spread out the harvesting work during the season, attempts over the last couple of years have been made to introduce early harvest varieties. The Gala, Teng Mu #1, and Zhuguang varieties which begin their harvest season in mid-July and finish in August are becoming more popular, particularly in Shandong province, but still make up only a small percentage of the total crop

every year. Among these varieties, the Gala appears to be the most prevalent.

The Fuji continues to be the most widely growth apple variety in China. According to China's Ministry of Agriculture, Fujis now account for between 50 and 60 percent of the country's apple production and area. In some regions, the Fujis account for an even greater percentage of the apple crop. In Shandong's Yantai area, Fujis make up over 85 percent of the crop. Last year, Fujis accounted for approximately 70 percent of Shandong province's apple crop and 50 percent of Shaanxi's crop. The widespread growing of Fujis in China was achieved mainly through grafting and Fuji rootstock is rare. Other popular apple varieties grown in China include: the New Red Star (similar to the U.S. Red Delicious), the Chalajin, Guoguan, Qinguan, the Jinguan, and the Gala. None of these varieties make up much more than 10 percent of the annual apple crop.

The wrapping of individual apples in bags during the fruit growth phase is becoming more popular, particularly in the eastern growing regions. One Shandong fruit industry participant claims that approximately 30 percent of the apples grown in his province are bagged every year. The rate is even higher within certain regions of the province. For example, in Yantai's Qixia township district, the bagging rate is about 80 percent. Another source says that over 3 billion apples are wrapped in Yantai every year. The purpose of the bagging is not only to decrease the risk of disease and pest damage, but also to modify the fruit's color. Local industry sources say that bagging the apples for most of the their growth phase allows the fruit to acquire a brighter red coloring which is appreciated by both domestic and certain overseas consumers. The bags are usually placed on the apples in June, around 60 days after flowering, and do not come off until 60 to 100 days later, a week of two before harvest. When the bags are removed, the apples have a whitish coloring, but turn red within a seven to 14 days. Industry sources say that this methodology originated in Japan and Taiwan which also were the sources of most of the bags originally used. However, the bags used now are produced in China and cost growers four to 15 fen ($ 0.005 - 0.018) each. Some growers re-use bags for several years before purchasing new ones. Most of the bagged apples are Fujis and the source of overseas exports.

A few published sources advocate applying this technique to grape growing, but this technique presently seems to be only applied to apples and pears. In recent years, the number of bagged pears in Hebei province, the leading pear producing province, reached 1.2 billion.

The harvest time for pears varies across the country, from June to October. June to July is the main harvest time for pears in the southern part of China and September to October in the northern part. Although most of China's pears are still grown in the northern part of the country, pear production in southern provinces is expanding and sometime in the future may result in a more even distribution of the harvesting work.

Unlike apples, no single variety dominates pear production in China, but several account for most of China's production. Ya pears are the most popular variety, accounting for 30 percent of production. They are the main variety grown in Hebei province, Shandong province, and the Tianjin/Beijing city districts. Su and Xuehua pears also are widely grown. The Su pear dominates pear production in Anhui, Shanxi, and Xinjiang. According to the national Ministry of Agriculture, the top four most widely produced pear varieties are the Ya, Su, Xuehua, and Pingguo(Apple). However, their popularity among growers is starting to diminish a little as some switching to more traditional Japanese varieties, i.e Fengshui pear, is occurring. Altogether China mainly grows 13 different major varieties of pear.

Most of China's grapes are harvested between the months of August and October every year. However, to extend the season, greenhouses are now being used to grow grapes, but amounts grown in greenhouses currently

make up only a small portion of the total crop. Although the greenhouses used are simple relative to their Western counterparts, local experts believe that they are sufficient to allow the harvesting of grapes anytime during the year. Provinces and city districts promoting the greenhouse growing of grapes include: Beijing, Tianjin, Hebei, and Shandong. Qingdao's Laixi county in Shandong province has been a leader in grape greenhouse growing.

Among grapes, the most popular variety is the Jufeng. Most of China's grape production is made up of 12 different major varieties. In Xinjiang, the country's leading grape growing region, almost 70 percent of the crop is usually made up of seedless varieties.

In the late 1990s, Red Globe grape production made its debut, but the acreage presently is limited. According to one published report, Red Globe grape acreage in China during 1998 equaled 1,330 hectares, less than one percent of that year's overall grape acreage in China. The acreage mainly is located in the provinces of Liaoning (400 hectares), Hebei (330 hectares) and Shandong (120 hectares), all located on China's east coast. The same source stated that the local government of Shaanxi plans to establish a Red Globe grape production base with an acreage of 13,300 hectares by the year 2005. The specific location was not cited. However, the time when domestically produced Red Globes are widely available to consumers in China may not occur in the near future. Shandong provincial agriculture officials have admitted that Red Globe production in their province is plagued by major disease problems.

Provincial Production Tables

CHINESE PROVINCIAL APPLE PRODUCTION (1997 - 1999)						
PROVINCE	1997		1998		1999	
	1,000 ha	MT	1,000 ha	MT	1,000 ha	MT

Beijing	21.0	153,835	20.3	162,930	18.9	151,717
Tianjin	12.5	80,253	11.0	88,388	11.7	81,039
Hebei	371.3	1,751,374	355.3	1,930,339	341.1	1,871,157
Shanxi	206.1	1,101,227	196.0	1,410,718	187.7	1,748,293
Inner Mongol	35.1	38,439	24.0	36,729	23.8	41,757
Liaoning	234.6	1,611,487	217.0	1,674,628	209.0	1,469,839
Jilin	19.6	61,705	20.0	105,877	18.8	114,604
Heilongjiang	36.4	96,993	36.4	102,137	32.2	96,962
Shanghai	0.0	0	0.0	0	0.0	0
Jiangsu	68.0	549,159	60.8	628,721	63.6	679,626
Zhejiang	0.4	806	0.4	991	0.4	1,036
Anhui	42.4	272,130	32.1	257,280	24.7	308,521
Fujian	0.2	131	0.2	218	0.2	257
Jiangxi	0.0	0	0.0	0	0.0	0
Shandong	618.5	5,582,052	556.8	5,995,558	498.2	6,432,745
Henan	293.9	1,972,032	269.0	2,226,397	240.7	2,427,717
Hubei	13.8	58,644	12.5	60,029	11.0	30,447
Hunan	0.0	0	0.0	0	0.0	0
Guangdong	0.0	0	0.0	0	0.0	0
Guangxi	0.0	0	0.0	0	0.0	0
Hainan	0.0	0	0.0	0	0.0	0
Chongqing	2.0	4,274	2.1	6,167	2.2	5,688
Sichuan	29.5	161,166	28.4	177,420	28.7	186,798
Guizhou	6.9	5,713	7.2	6,828	7.2	7,010
Yunnan	47.7	80,330	46.4	79,767	45.1	85,919
Tibet	1.3	4,837	1.0	4,265	1.0	5,506
Shaanxi	488.0	2,636,537	455.4	3,473,510	413.6	3,992,705
Gansu	212.0	561,019	199.0	670,039	195.0	629,027
Qinghai	4.4	18,884	4.4	16,138	4.1	15,897
Ningxia	30.6	140,363	24.9	125,552	23.7	170,536
Xinjiang	42.2	275,178	41.0	240,094	36.2	246,838
SUM	2,838.1	17,218,571	2,621.6	19,480,720	2,439.0	20,801,641

Source: China State Statistical Bureau
Note: The provincial production and area figures for 2000 still are unavailable. Total production in 2000 equaled 20.43 million metric tons and total crop area 2.25 million hectares.

CHINESE PROVINCIAL GRAPE PRODUCTION (1997 - 1999)						
	1997		1998		1999	
PROVINCE	1,000 ha	MT	1,000 ha	MT	1,000 ha	MT
Beijing	1.3	18,310	1.6	20,318	1.9	23,070
Tianjin	2.4	47,663	3.5	56,032	4.0	76,547
Hebei	25.9	361,689	31.5	404,436	39.4	447,002
Shanxi	6.4	28,178	6.3	33,393	6.2	36,411
Inner Mongol	2.6	15,142	2.2	16,826	2.6	14,867
Liaoning	11.8	193,380	14.2	275,557	20.8	307,453
Jilin	7.9	44,591	8.6	50,302	9.3	52,814
Heilongjiang	1.9	7,916	1.6	8,157	1.5	7,249
Shanghai	1.3	29,919	1.2	26,679	1.1	22,007
Jiangsu	4.9	67,907	4.2	71,577	5.9	77,060
Zhejiang	4.5	95,829	4.5	92,021	4.6	97,346
Anhui	4.5	39,684	3.6	34,281	3.5	48,868
Fujian	1.9	21,650	2.1	27,503	2.2	32,449
Jiangxi	1.6	3,375	2.2	2,551	2.0	2,892
Shandong	17.5	215,839	20.9	268,986	29.2	362,593
Henan	9.7	120,367	11.3	153,047	12.2	182,392
Hubei	3.6	49,595	4.0	53,893	5.3	70,952
Hunan	3.1	11,272	3.0	13,359	3.4	14,960
Guangdong	0.0	0	0.0	0	0.0	0
Guangxi	0.0	14,929	0.0	21,662	2.7	25,455
Hainan	0.0	2	0.0	0	0.0	0
Chongqing	1.0	5,942	1.0	8,618	1.0	9,142
Sichuan	5.3	66,659	5.1	82,611	6.4	97,005
Guizhou	2.2	6,822	3.4	7,621	2.5	9,077
Yunnan	1.2	11,697	1.6	11,881	2.6	15,599
Tibet	0.0	0	0.0	0	0.0	0
Shaanxi	5.0	39,357	4.3	41,845	4.4	37,669
Gansu	1.7	11,501	2.2	13,782	3.0	20,150
Qinghai	0.0	189	0.0	67	0.0	106
Ningxia	1.0	5,243	1.9	5,806	4.2	6,577
Xinjiang	28.0	498,160	32.0	555,408	41.3	610,415
SUM	158.2	2,032,807	178.0	2,358,219	223.24	2,708,127

Source: China State Statistical Bureau
Note: The provincial production and area figures for 2000 still are unavailable. Total production in 2000 equaled 3.28 million metric tons and total crop area 283 thousand hectares.

CHINESE PROVINCIAL PEAR PRODUCTION (1997 - 1999)						
	1997		1998		1999	
PROVINCE	1,000 ha	MT	1,000 ha	MT	1,000 ha	MT
Beijing	7.9	94,535	8.9	105,436	9.4	98,705
Tianjin	3.1	22,466	3.0	25,305	3.7	20,075
Hebei	230.4	2,113,339	224.3	2,388,517	221.8	2,509,805
Shanxi	30.4	91,603	30.8	101,843	30.6	118,816
Inner Mongol	27.3	102,115	34.5	116,421	30.2	111,872
Liaoning	80.8	471,870	82.1	610,898	82.5	424,605
Jilin	34.4	101,042	34.0	134,799	36.1	136,699
Heilongjiang	6.5	12,384	6.7	28,357	6.6	29,804
Shanghai	0.8	14,651	0.8	12,895	0.9	16,298
Jiangsu	24.0	312,562	23.0	308,453	38.2	361,118
Zhejiang	9.8	73,983	11.0	85,740	12.8	114,341
Anhui	29.1	307,332	29.5	426,452	31.2	492,525
Fujian	16.5	59,056	17.2	72,289	19.3	81,307
Jiangxi	23.5	37,466	21.3	32,784	21.0	38,899
Shandong	78.0	778,169	63.3	714,667	73.5	857,807
Henan	23.5	148,144	27.3	202,469	28.8	263,003
Hubei	48.6	480,268	51.4	564,420	54.1	541,856
Hunan	14.4	23,290	14.3	24,719	14.8	27,293
Guangdong	7.0	27,436	9.5	31,621	8.4	36,892
Guangxi	9.1	60,167	9.5	62,381	9.8	67,818
Hainan	0.0	0	0.8	0	0.0	0
Chongqing	9.1	31,250	11.6	52,070	13.1	53,376
Sichuan	25.0	200,372	27.8	249,712	34.2	272,066
Guizhou	9.0	31,592	2.0	38,972	15.6	46,114
Yunnan	36.1	149,387	35.3	145,803	38.9	152,099
Tibet	0.1	929	0.1	1,515	0.1	492
Shaanxi	54.0	266,063	52.0	376,370	52.0	432,356
Gansu	57.2	242,462	57.4	238,237	57.3	222,097
Qinghai	1.0	5,891	1.0	6,585	1.0	5,931
Ningxia	2.0	7,930	2.2	6,951	2.3	10,114

Xinjiang	**25.4**	**147,123**	**25.8**	**108,783**	**28.6**	**198,148**
SUM	**924.0**	**6,414,877**	**918.5**	**7,275,464**	**976.78**	**7,742,331**

Source: China State Statistical Bureau
Note: The provincial production and area figures for 2000 still are unavailable. Total production in 2000 equaled 8.41 million metric tons and total crop area 1.02 million hectares.

Crop Area

Deciduous fruit is grown in all of China's provinces, except in Hainan which is located in the country's tropical south. Production is centered in the north from Heilongjiang province in the east to Xinjiang in the far west and all provinces in between. While pears can be found growing in nearly all of China's provinces, the same is not true for apples and grapes. In the country's center south and southwestern provinces, neither apples nor grapes are grown.

Most of China's apple production occurs in three specific areas of the country: around the Bohai Gulf, along the Yellow river, and on the northwestern loess plateau. These areas include the provinces of Shandong, Liaoning, Hebei, Henan, Shaanxi, Shanxi, and Gansu. In 1999, these provinces altogether accounted for 82 percent of China's total apple production and 85 percent of total acreage. Shandong for many years has been the leading producing province and continues this role even today.

Apple acreage in China continues to decline. Acreage according to official statistics for the year 2000 dropped to 2.25 million hectares, a decrease of 185 thousand hectares since 1999. The year 2000 marked the fourth straight year of declines in China's apple acreage, a decrease of 24.5 percent since the 1996 season when apple acreage had reached its highest level in China. For the year 2001, Chinese government and industry officials expect another decrease. As of last year, the country's apple acreage approximately equaled its 1993 level of 2.23 million hectares.

The decline in apple acreage does not appear to be localized. Nearly all of China's main apple producing provinces have shown acreage declines since 1996. The declines also do not seem to be localized within provinces. For example, a comparison of 1998 and 2000 county and city apple acreages in both Henan and Shandong provinces, two of the country's biggest producers, shows decreases in nearly every location. According to growers and industry officials, 1996 also was the year when China's domestic apple prices were at their highest and since that year prices have been low in comparison. China's Ministry of Agriculture also noted that apple seedling demand recently has been low.

The acreage situation for both pears and grapes in China differs from apples. While pear acreage after a few years of decline seems to have stabilized, grape acreage keeps growing. Hebei province still has the most acreage devoted to pear production, but acreage is growing in southern provinces. As for grapes, acreage is nearly double the 1995 area. Acreage growth has been the greatest in traditional grape growing provinces, i.e. Shandong, Liaoning, Hebei, and Xinjiang. Industry sources contribute most of the increases to the demands of China's expanding wine industry.

At the apple and pear orchard level, two major planting styles exist: row spacing and circular spacing. Between the two styles, row spacing is becoming more dominant, especially among growers with larger holdings. Row spacing refers to planting trees in distinct rows. Based on random measurements by Post over the last three years, the distance between trees in rows tends to range between two and four meters and between rows two to five meters. Circular spacing refers to planting trees in such a way as to give each tree a minimum radius from the other trees in the orchard. This minimum radius often varies from two to two and a half meters. Row spacing is dominant in the leading apple producing provinces of Shandong and Shaanxi.

As for grapes, using trellis lean-tos set in rows and cloths-line structures are popular growing arrangements. Cloths-line structures are basically a line of posts with crossbars on their tops and wire strung between their posts. Although the specific shapes, slopes, and lengths of the lean-tos may vary, spacing tends to range from one to two meters between rows. Variations exist with the cloths-line structures too. In addition, some growers, at least in Shandong and Liaoning provinces, cover their vineyards with nets in order to protect the fruit from scavenging birds.

Inputs

Chinese deciduous fruit growers' production costs on average range from 300 to 600 RMB per mu ($36 to $73), 4,500 to 9,000 RMB per hectare ($544 to $1,088). Specific costs per grower mainly depend on grower acreage and management methods. On a few of the better managed holdings, whose growers strive to produce superior quality fruit, production costs can reach a range as high as 1,000 to 2,000 RMB per mu ($121 to $242), 15,000 to 30,000 per hectare ($1,814 to $3,628). The major inputs for deciduous fruit growers in China in order of cost are: agricultural chemicals, water, and labor.

Deciduous fruit growers' main production input is agricultural chemicals. Included are: pesticides, plant medicines, and fertilizers. The government at all levels did not pay too much attention to chemical usage by growers until a few years ago and now is trying to reduce growers' dependence on chemicals through greater usage controls. For example, the Chinese Ministry of Agriculture claims that agricultural chemicals which leave high amounts of residue are now banned. Officials say that environmental protection in recent times has become an important issue. In Shandong province, for example, the officials claim that they currently are encouraging more bio-friendly methods of disease and pest control.

In regards to pesticides and plant medicines, the specific number of applications tends to depend on various factors, i.e. weather, incidence of disease in the region, etc. Growers often will apply these chemicals themselves with simple hand sprayers. However, in some locations, individuals will sell application services to growers. These individuals often are growers themselves. Chemicals used to extend the harvest season are rare, because growers believe yields would be adversely affected. Some growers and industry sources say that bagging has helped reduce chemical usage.

Fertilizer usage by China's deciduous fruit growers is more popular than originally believed by Post, but its usage seems to be less than what many growers desire due to expense. However, growing surfaces still are a major factor determining usage. Apple and pear trees grown on even land tend to receive more fertilizer from their growers than those planted on hilly or sloping land. On hilly and sloping land, keeping fertilizers in place to help tree growth and fruit production is much more difficult and wastage rates are often higher. As for usage rates, in Shandong's Yantai, one grower interviewed by Post claimed that each year 50 kilograms are needed for

every 10 trees. Average cost per kilogram cited by growers is about two Yuan ($ 0.24). One grower cited a price of 96 to 99 Yuan ($ 11.61 - 11.97) for a 50 kilogram bag of fertilizer, while another claimed a price of over 70 Yuan ($ 8.46) for a 40 kilogram bag. Both growers had trees on even land and claimed that they would use more fertilizer if the cost was lower. To keep costs down, some growers rely on animal/human manure or mulched grasses as fertilizers.

Irrigation has become an important practice for all growers who maintain more than a mu of deciduous fruit. To facilitate irrigation of orchards, growers generally rely on ditches, dripping, and spraying. However, some growers have even placed underground pipes in their orchards to facilitate the process. Nearly all growers have at least one concrete pit or basin in their orchards to assist with irrigation and/or with the preparation of pesticides/herbicides/bactericides which are sprayed onto the trees. Many of these pits/basins are connected to a water source. In many growing regions, village committees and local governments maintain reservoirs for the growers to tap. The water is not free and growers usually pay according to amounts used. To date, water usage for deciduous fruit crops at least in the eastern part of the country has not been a problem and water tables in rural areas remain at acceptable levels.

Labor is an expense that usually applies to growers with larger holdings. Growers with many mu of land often need extra people to apply agricultural chemicals, prune the trees, pick the fruit at harvest time, and other related activities. Growers with small holdings tend to perform most, if not all, of these tasks themselves. The use of machinery in support of deciduous fruit planting, growing, and/or harvesting is practically non-existent in China. Grower orchards tend to be too small to make its use cost effective.

The level of grower orchard management knowledge and skills is generally low across the country, especially in regards to tree grafting and pruning. Only in Shandong province is the overall knowledge and skill level slightly higher. Compared to other provinces, greater attention was paid to management knowledge and skills much earlier.

Yields

Apple trees in China upon reaching full maturity produce 20 to 60 kilograms per tree each season. The rate of production among pear trees is in a slightly higher range. Planting density of apple and pear trees in China falls into a range of 60 to 270 trees per mu, 900 to 4,050 trees per hectare, based on random measurement sampling of apple and pear orchards. In addition, the lower densities currently tend to be more prevalent than higher ones. China's apple and pear yields in general depend on many factors, including the variety, weather, soil conditions, the incidence of pests and disease, and agricultural chemical use.

Nearly 70 percent of China’s apple trees are estimated to be fully mature and producing at or near their full potential, according to China’s Ministry of Agriculture. This percentage is slightly higher in some of the major producing provinces. In Shandong province, for example, the provincial agriculture bureau estimates that about 75 percent of the apple trees in the province are fully mature and producing at their full potential, trees with ages of over eight years. A bureau official added that a little over 10 percent of the trees are producing, but are not mature enough to produce at their fullest potential, trees aged between five to eight years old. He also stated that only 10 percent are not yet producing any fruit. Most of China’s apple and pear trees were planted in the late 1980s.

One prevalent grower practice which might be having an effect on apple yields in the short term is tree trunk cutting. It is not uncommon for many growers throughout China to strip off or cut the trunk bark of their apple trees. Growers interviewed by Post about this practice claim that the activity helps to increase the number of buds per branch, but at the same time they admit that the practice usually shortens the trees' productive lifespan. These growers estimate that productive lifespans through this activity are reduced by one-third, making the trees productive for only 18 to 20 years instead of 30 years. Many growers also use extensive pruning in order to keep their trees relatively small, a maximum three to four meters in height.

Again this year, diseases and pests have not been a problem in any of China's deciduous fruit growing regions. In the north central region which covers Shandong, Shanxi, and Hebei, hot and dry weather conditions have kept damage limited. Some of the more prevalent deciduous fruit diseases which occur in Shandong province for example include: Valsa mali (Miyabe et ramada) - apples, Physalospora piricola (Nose) - apples, Venturia pirina (Aderh) - pears, Glomerella cingulata (Ston, Schr. Et Spauld) - grapes, and Plasmopara vificola (Berk.. ef Carf., Berl. et de Toni) - grapes. According to one Shandong agricultural official, Valsa mali (Miyabe et ramada) affects approximately five percent of their apple crop every year.

The only deciduous fruit variety in China plagued with major disease problems during the last couple of years has been Red Globe grapes. According to Shandong province agricultural officials, a sizable amount of their province's crop is infected with Black Pox Disease (Sphaceloma ampelinum de Bary) and Downy Mildew (Plasmopara vificola (Berk. ef Carf.) Berl. et de Toni). The former is said to be more prevalent than the latter. The officials added that local conditions and the environment is mainly to blame for the problem. Red Globe grapes make up an extremely small percentage of China's grape crop.

National and provincial government agricultural officials continue to claim that no genetically modified deciduous fruit varieties are being grown in China on any widespread basis. They also expressed doubt over whether any schools or private companies in China are carrying out any experimental growing.

Production Policy

The Chinese government on both the national and provincial levels continues to maintain a generally free market policy in regards to deciduous fruit production and prices. Grower assistance and support from these levels of government is limited. Government interference at these levels is also limited, but at the county and village level sometimes it is more intrusive.

Chinese government assistance to fruit growers is administered at the county level. China's national Ministry of Agriculture and the provincial agriculture bureaus manage production and do not get involved in assistance administration. According to several different provinces' agriculture bureaus, assistance generally is management advice, technical training, education concerning available varieties, and market information. Other assistance is available, but on a fee basis. In Shandong province, for example, provincial authorities assistance to growers is limited to educational, promotional, and some marketing activities. In terms of marketing and promotions, activities include: local newspaper advertisements, local television advertisements, and national trade show participation. However, despite government claims of assistance, many deciduous fruit growers say that any assistance or support is very limited to non-existent.

In some cases, the local government organs have been very intrusive in regards to grower activities. One grower

in Yantai, for example, said that the village committee until the late 1990s required him to grow apples. Since the committee was in charge of land use and had the power to revoke his land usage contract, there was nothing he could do except follow its directives. However, the grower claimed that over the last few years the committee has given him more freedom to make commodity growing choices and now grows other products along with apples. Similar stories have been reported in other places throughout China.

Deciduous fruit growers are taxed in a slightly different manner than the average farmer. Instead of turning over a percentage of their crop, fruit growers pay a National Agriculture and Forestry Specialty Product Tax at the rate of approximately 12 to 13 percent of growers' incomes. This tax is collected by the county authorities, but the village committees are the ones who contact the growers directly for collection. The tax was initiated due to the huge rise in cash crop production during the 1990s. Although this tax rate at the local level is 12 to 13 percent, a Ministry of Agriculture official has told Post that they only collect 10 percent from growers. The provincial governments, local governments, and village committees are believed to keep a portion of the proceeds.

In regards to the National Agriculture and Forestry Specialty Product Tax, growers' average annual payments and tax collection methodologies differ among localities. For example, in Shandong province, a provincial agricultural bureau official claims that growers are taxed according to the value of their estimated production and an estimated market price is used for the value assessment. He went on to say that, before adopting this method, taxes were based on growers' net profits. However, a grower in the same province says that she is taxed according to the amount of acreage dedicated to production. Yet another grower in the same province, but different locality, says that local growers pay the equivalent market value of 100 kilograms of good quality apples during orchards' sixth year of production, 200 kilograms during the seventh year, and 300 kilograms for all later years. Apple trees in China usually do not start bearing fruit until five years after planting. On a per mu basis, grower monetary payments are estimated to range between 200 and 350 Yuan ($ 24.18 - 42.32).

The National Agriculture and Forestry Specialty Product Tax usually is not the only tax which growers pay. Other taxes are collected, but amounts and the specific purposes (i.e. population, public security, etc.) vary from county to county across the county.

Allowing fruit prices to be determined by market forces has enabled growers to earn incomes which are usually higher than the average farmer. Grower tend to earn two to ten times more than farmers who focus on grains. However, consistent low farmgate prices over the last several years has dulled the allure of making money through deciduous fruit. In some production regions, growers already have taken action by switching to other crops. For example, in Shandong province, typical deciduous fruit growers derive 60 to 80 percent of their incomes from fruit, earning in a range of 3,000 to 5,000 Yuan ($ 362.76 - 604.59) per mu from fruit.

Farmgate prices for most deciduous fruit varieties remain low across the country. In Shandong province, for example, growers on average earn six to ten Jiao ($ 0.07 - 0.12) per kilogram for Fuji apples and the price is even lower for other varieties. For grapes, the price is about one Yuan ($ 0.12) per kilogram, down from 1.4 Yuan ($ 0.17) a year ago. Growers whose fruit is bagged and used for export can earn more, approximately 2.5 Yuan ($ 0.30) per kilogram. These cited prices are from early September and often fall lower when harvest is in full swing during October. Shandong Galas can command higher prices, but mainly due to their early harvest time. Prices for other varieties of apples, i.e. New Red Star and Guoguan, are usually lower. The wholesale mark up, based on a sample of current prices, can range from five to eight Jiao ($ 0.06 - 0.10) per kilogram.

Although growers tend to be unhappy about the price situation, they in many cases are resigned to the fact and continue growing fruit. In some places, growers have no choice about continuing since their village committee actually holds title to the land and requires the growers to keep growing deciduous fruit. However, some growers, particularly in Shandong province, are diversifying their crops or even ceasing to produce deciduous fruit, despite previous investments in trees. In some areas of the province, it is now becoming more common to see strawberries, peanuts, vegetables, and other crops within or alongside deciduous fruit orchards.

One recent phenomenon is private growers organizing themselves into unofficial cooperatives to share resources and better market their produce. These cooperatives now are few in number and tend to represent growers in specific locations. Provincial governmental bodies are aware of their existence and seem unconcerned with their activities. Whether these private groups are achieving their goals is still unknown at the present time.

Although detailed national government mandated standards exist for deciduous fruit, in the markets, distributors and wholesalers apply more simplified standards. These market standards usually consider fruit size, color, and surface appearance. Larger fruit with good coloring and few to no surface scars tend to command the highest prices, while smaller sized fruit with poor coloring and visible scarring garner lower prices.

For apples at least, five different official quality grades are known to exist. They include: special (the best), first, second, third, and fourth (the worst). Although how much of China's annual apple crop falls into each grade is presently unknown, one grower interviewed by Post in Liaoning province claimed that approximately 40 percent of her orchard's crop every year is special or first grade and the remainder is made up of lower quality grades.

Government officials are not as optimistic about the future of China's deciduous fruit industry as they once were. Concerns about the impact of joining the World Trade Organization (WTO) have arisen. In general, they fear that joining WTO will make imported fruit more cost competitive versus domestic produce and the greater amount of imports may pre-empt improvements in the quality of China's own fruit. However, at the time, they feel that joining WTO may enhance overseas cooperation and investment in China's own deciduous fruit industry which could lead to its improvement. According to sources, at the present time only one percent of China's deciduous fruit growers and processors can afford to use high technology for grading, harvesting, sorting, cleaning, and waxing.

Grading System for Apples (China): GB10651-89

Name\Grade	Special Grade	1st Grade	2nd Grade
Basic Quality Requirements (applicable to all grades)	All fruit varieties and grades must be in good shape, fresh, clean, without any odor or usual taste, or foreign moisture. It must be carefully picked, fully grown, and ripe for the market or storage.		

Shape	Have the variety's characteristics.	Slight injury to the fruit acceptable.	Though the fruit has defects, it still has the basic characteristics of the variety. Abnormal fruit not acceptable.
Color	Light or dark red, 60% of the surface colored.	Light or dark red, 50% of the surface colored.	Light or dark red, over 25% of the surface colored.
Stem	Undamaged.	Slight damage to the stem acceptable.	Fruit with no stem acceptable, but no damage to the fruit.
Diameter, Red Fuji (mm)	= or > 80 mm	= or > 70 mm	= or > 65 mm
Diameter, New Red Star/Red Delicious (mm)	= or > 70 mm	= or > 65 mm	= or > 60 mm
Surface	*Fresh, clean, and two or less of the following not affecting quality or appearance acceptable.*	*Fresh, clean, and less than three of the following not affecting appearance, pulp, or storage quality acceptable.*	*Fresh, clean, and less than three of the following not damaging the pulp acceptable.*
Rust	*Rust is a peel characteristic of several apple varieties. In order not to affect the appearance, the following requirements should be met:*		
1. Brown Rust	Not exceeding stem, not rough.	Slightly stretching out of the stem, surface not rough.	Stretching out of the stem and surface slightly rough.
2. Netted Layer Rust	Unobvious separate and slight, total area not exceeding 1/10 of the surface.	Smooth netted layer accepted, total area not exceeding 1/5 of the surface.	Slightly rough net rust, total area not exceeding ½ of the surface.
3. Serious Rust	None.	Maximum area not exceeding 1/20 of the surface.	Maximum area not exceeding 1/3 of the surface.
Defects in appearance	*No defects, but less than three of the following not affecting quality or appearance acceptable.*	*Less than three of the following not affecting pulp, appearance, and storage quality acceptable.*	*Less than three of the following not affecting pulp acceptable.*

1. Pricks (including scratches and hail damage)	None	None	Two places, not exceeding 0.03 square mm acceptable.
2. Bruise Marks	One slight mark acceptable, not exceeding 0.5 square mm.	Slight marks acceptable, total area not exceeding 1.0 square mm, single maximum damage area not exceeding 0.5 square mm.	Slight marks acceptable, total area not exceeding 2.0 square mm, single maximum area not exceeding 1.0 square mm, damaged places should not be turning brown, no obvious damage to the pulp.
3. Rub Marks	One slight mark acceptable, area not exceeding 0.5 square mm.	Slight marks not turning black acceptable, area not exceeding 1.0 square mm.	Marks not seriously affecting the appearance acceptable, area not exceeding 2.0 square mm.
4. Water marks and Dirt Spot Disease	None. Marks of thin layers acceptable, area not exceeding 0.5 square mm.	Marks of thin layers acceptable, area not exceeding 1.0 square mm.	Water marks and unobvious dirt spots acceptable, total area not exceeding 1.5 square mm.
5. Sunburns	Not acceptable.	Peach red and whitening red acceptable, area not exceeding 1.0 square mm.	Yellowish sunburns acceptable, total area not exceeding 2.0 square mm.
6. Pesticide damage	None, unobvious thin layers not affecting specified color acceptable, area not exceeding 0.5 square mm.	Thin layers acceptable, total area not exceeding 1.0 square mm and not affecting the specified color.	Thin layers acceptable, total area not exceeding 2.5 square mm, but no softness in the damaged places and no swelling or breaking in the peel.
7. Hail damage	One slight mark acceptable, area not exceeding 0.1 square mm.	Two slight marks acceptable, diameter of each should not exceed 0.5 square mm, total area not exceeding 0.4 square mm.	Hail damage that does not break the peel or peel showing good recovery from the damage acceptable, total area not exceeding 2.5 square mm.

8. Leaks in the fruit	None	Two leaks caused by wind acceptable, length of each not exceeding 0.5 square mm.	Three leaks caused by wind acceptable, the length of each not exceeding 1.0 square mm.
9. Insects and diseases	None	None	None
10. Insect bites	None, one slight bite mark acceptable, total area not exceeding 0.03 square mm.	Dried insect bite marks acceptable, total area not exceeding 0.3 square mm.	Dried insect bite marks acceptable, total area not exceeding 1.0 square mm.
11. Other Minor Defects	None	Five spots acceptable	Twenty spots acceptable

Note - mm: milimeter

Consumption

China's urban consumers eat a large amount of fruit every year. According to national statistics, China's average per capita purchases by urban households in 1999 was 46.07 kilograms, compared to 47.86 kilograms in 1998 and 45.48 kilograms in 1997. Fruit is consumed with most meals and is a popular snack, especially fresh deciduous fruit like apples and grapes. It is often purchased as a gift, particularly during Chinese New Year and other holidays. Rising incomes are increasing the number of consumers who can purchase fresh fruit, but the increased availability of processed foods at the same time has created more competition.

Apples are the most widely consumed fruit in China. In Guangdong province located in the country's far south and the home of many of China's richest consumers, for example, household apple purchases are greater than purchases of other fruits. According to the Guangdong provincial statistical bureau, annual per capita purchases of apples by Guangdong urban households in 1999 was 6.85 kilograms, an amount higher than other types of fruit. During the same years, purchases of citrus were only 3.23 kilograms and bananas 2.49 kilograms. For grapes, the purchase amount was only 0.9 kilograms.

Greater fresh fruit availability for longer periods of time also has assisted greater consumption by Chinese consumers. Less than a decade ago, most Chinese apples were sold before the start of winter. According to industry sources, they along with other domestic deciduous fruits now can be purchased nearly anytime during the whole year. Longer periods of availability mainly are due to increases in cold storage and controlled atmosphere storage capacity in China. However, these sources also admit that consumer demand for the stored fruit is not as great as during the beginning of the season, because consumers often dislike the poorer taste due to long storage.

The percentage of each year's deciduous fruit harvest that goes into processed foods and beverages is still low, usually 10 percent or less. However, the percentages for specific fruits vary. While the percentage of the apple crop going into processed foods and beverages is close to the overall percentage, the percentage of the pear crop is usually lower and the percentage of the grape crop much higher.

According to various estimates from Chinese government and food/beverage industry sources, five to ten

percent of each year's apple crop in China is processed. The specific amount varies from year to year. Apple juice concentrate continues to be the main processed apple product in China. Although the Chinese government has not published a national apple juice concentrate output number since 1999, the amount produced last marketing year (2000-2001) is estimated to be approximately 200,000 tons. Most of the concentrate was exported abroad.

A major source of much of China's apple juice concentrate production is Shandong province. According to one provincial official, production last year was 66,000 tons and 60 percent of that amount came from only five companies. Many of the province's apple juice concentrate factories are located in and around the province's Weihai and Yantai regions which are located in the eastern most part of the province. Both provincial officials and industry participants are concerned about the quality of apple juice concentrate produced in their province and regret that quality will not improve until producers switch to higher quality raw materials. Growers generally only sell their poorer quality produce to the concentrate makers, because the growers' higher quality fruit commands higher prices from wholesalers and distributors who sell fruit for direct human consumption. Concentrate producers in Shandong province in recent years have paid on average one to four Jiao ($ 0.01 - 0.05) per kilogram for apples.

Although a published source cited that China had 55 apple juice concentrate factories in 1998, the number in operation is currently believed to be less than that number due to continuing low world apple juice concentrate prices. One industry source estimates that less than 20 factories are now in operation within Shandong province, but only six or seven are capable of large scale production. The China Food Industry Yearbook (1999) claimed that the province had 22 factories in 1998.

Wine and raisins are the main processed grape products currently produced in China. The wine industry in China has become a major grape consumer and now is often cited as the driving force behind much of China's current expansion in grape acreage and production. China's wine production in 1999 was estimated at 270,000 tons, an increase of 100,000 tons since 1996. During the same year, the number of wineries in China was approximately 200 and had a combined annual production capacity of around 500,000 tons. However, seventy percent of these wineries have capacities of less than 1,000 tons per annum. Only six wineries in 1999 produced more than 10,000 tons each. Although a breakdown of provincial wine production is unavailable, Shandong province, the home of several of China's biggest wineries, produced 80,000 tons in the year 2000. Shandong for years has been the leading wine producing province in China. Wine production is also sizable in Hebei, Tianjin, Beijing, Henan, and Anhui provinces.

Another popular processed product from grapes in China is raisins. The Chinese raisin industry is concentrated in the Xinjiang, located in the country's far west. According to a published source, approximately 80 percent of Xinjiang's white, seedless grapes are processed into raisins every year. In 2000, Xinjiang produced 47,827 tons of white, seedless grapes which equaled 69.7 percent of its total grape production.

Approximately five percent of the pear crop every year is used by the local fruit processing industry. Most processed pears are canned, but some are also made into juice concentrate.

Trade

China continues to export much more deciduous fruit than it imports, but this situation does not apply to all

types. Fresh apples and pears comprise the bulk of exports which primarily go to Southeast Asia and Russia. Some grape exports occur, but the volume and value are much smaller than China's imports. Unlike last marketing year, Hong Kong re-exports to China were greater than China's official imports. Years ago, when many imported varieties of deciduous fruit were banned from entering China, re-exportation through Hong Kong was the main import channel into China for these fruits. In addition, China's apple juice concentrate exports remain on an upward trend.

China's exports of fresh apples, pears, and grapes all increased during the 2000/2001 marketing year compared to the previous marketing year, according to China's official customs statistics. The volume of apple exports was 281,851 metric tons, pear exports 167,257 metric tons, and grape exports 752 metric tons. As in years past, Russia and the countries of Southeast Asia were the main export destinations for much of China's deciduous fruit exports.

According to sources in China's apple trade, higher quality fruit tends to go to Southeast Asian importers, while poorer quality fruit to Russian importers. The main reason cited was that Southeast Asian consumers demand higher quality than Russian ones. Many of the apples that are exported to Southeast Asia are Fujis. One source has even estimated that nearly 80 percent of all of China's apple exports are Fujis and mostly come from either Shandong or Shaanxi province. Another source says that only about 20 percent of China's fruit is of high enough quality for export. China's apple export volumes every year are usually the highest during October, November, and December. These months include the main harvesting month and those immediately after it.

China's official imports of fresh deciduous fruits also rose during marketing year 2000/2001, but only apples and grapes. China's official customs statistics indicate that apple imports for marketing year 2000/2001 reached 34,856 metric tons and grape imports for marketing year 2000 rose to 52,408 metric tons. Approximately half of China's official apple and grape imports came from the United States. Chile and New Zealand were other big import sources for China. As for pears, 2000/2001 import volume was about the same as during the previous marketing year.

Hong Kong re-exports of deciduous fruit to China during marketing year 2000/2001 were again higher than most official imports. According to these statistics, re-exports of apples were 37,771 metric tons, grapes 46,518 metric tons, and pears 888 metric tons. Last year, for the first time in many years, the situation was reverse, causing speculation that a change in imported fruit distribution channels in China was occurring. At the present time, the amounts of re-exports which are counted in China's official import figures is unknown. Hong Kong may not be the only claimed destination for fruit that is eventually shipped to China. One Post trade contact recently speculated that some products destined for Vietnam are actually re-routed to China.

China's exports of apple juice concentrate increased again during marketing year 2000/2001. Export volume rose from 153,415 metric tons during 1999/2000 to 177,147 metric tons. The main export destinations remained about the same as during the previous marketing year. The United States' imports of Chinese apple juice concentrate increased by 39 percent.

Trade Tables

China's Monthly Fresh Apple Trade Summary CY 2000
(Volume: Metric Tons, Value: US$)

Month	Imports		Exports	
	Volume	Value	Volume	Value
January	1,036	429,350	22,826	8,732,718
February	1,411	593,139	19,584	6,841,387
March	2,304	977,315	25,406	7,960,429
April	3,728	1,584,410	22,434	7,569,384
May	2,324	1,066,002	15,405	6,209,181
June	3,064	1,461,604	11,571	4,818,484
July	1,883	874,439	6,133	2,620,099
August	3,073	1,447,400	7,028	2,849,586
September	3,132	1,545,207	21,795	5,743,739
October	767	359,710	49,683	14,764,408
November	875	426,210	46,816	14,083,966
December	1,877	913,746	48,875	14,327,398
Total	25,474	11,678,532	297,556	96,520,779
Source: China's Customs Statistics				

China's Monthly Fresh Apple Trade Summary CY 2001
(Volume: Metric Tons, Value: US$)

Month	Imports		Exports	
	Volume	Value	Volume	Value
January	3,554	1,590,232	22,435	6,594,786
February	2,368	1,129,384	20,086	6,267,996
March	3,245	1,476,843	20,742	6,616,066
April	6,283	2,818,192	15,636	6,124,127
May	3,933	1,795,080	11,374	4,743,314
June	3,866	1,793,761	11,248	5,821,241
July				
August				
September				
October				
November				
December				
Total	23,249	10,603,492	101,521	36,167,530

Source: China's Customs Statistics

China's Monthly Fresh Grape Trade Summary CY 2000
(Volume: Metric Tons, Value: US$)

Month	Imports		Exports	
	Volume	Value	Volume	Value
January	2,793	1,454,932	8	3,866
February	2,723	1,428,280	0	0
March	5,412	2,922,032	6	2,800
April	6,789	3,673,473	0	0
May	7,992	4,591,820	0	0
June	4,626	3,505,721	0	0
July	2,259	1,741,592	95	12,180
August	1,705	1,261,145	44	23,748
September	5,901	4,682,991	201	80,113
October	4,725	3,541,005	169	61,992
November	3,439	2,704,478	188	47,089
December	4,045	3,107,668	42	7,504
Total	52,409	34,615,137	753	239,292

Source: China's Customs Statistics

China's Monthly Fresh Pear Trade Summary CY 2000
(Volume: Metric Tons, Value: US$)

Month	Imports		Exports	
	Volume	Value	Volume	Value
January	51	16,053	11,618	3,037,313
February	7	8,055	7,708	1,889,867
March	64	37,880	12,787	2,886,614
April	191	106,556	20,274	4,575,173
May	160	80	8,305	2,098,388
June	44	22,887	4,785	1,501,555
July	66	39,855	3,277	819,812
August	0	0	6,743	1,475,938
September	0	0	20,759	4,971,296
October	46	22,863	19,058	4,650,948

November	5	2,381	20,086	5,226,901
December	0	0	19,323	4,760,476
Total	634	256,610	154,723	37,894,281
Source: China's Customs Statistics				

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Source: China's Customs Statistics				

China's Monthly Fresh Pear Trade Summary CY 2001 (Volume: Metric Tons, Value: US$)				
Month	Imports		Exports	
	Volume	Value	Volume	Value
January	3	1,360	16,876	3,490,066
February	4	1,934	12,475	2,745,803
March	194	94,690	14,632	2,929,372
April	235	112,806	14,877	2,821,497
May	57	29,243	10,117	1,787,439
June	11	4,520	9,034	2,117,167

July				
August				
September				
October				
November				
December				
Total	504	244,553	78,011	15,891,344
Source: China's Customs Statistics				

China Exports: Apples (HS 0808.1000) by Destination Volume (Metric Tons); MY1999/2000, MY 2000/2001		
Country	MY 1999/2000	MY 2000/2001
Russia	53,897	50,318
Philippines	54,823	56,552
Indonesia	12,677	27,696
Singapore	19,372	20,571
Malaysia	25,157	25,803
Hong Kong	6,901	11,030
Thailand	11,343	13,656
Vietnam	37,213	10,106
Great Britain	1,484	4,861
North Korea	3,226	4,615
Mongolia	5,740	7,285
Myanmar	18,765	28,907
Nepal	2,705	2,178
Sri Lanka	1,660	5,375
Bangladesh	52	1,485
Kazakhstan	3,630	2,349
U.A.E.	2,058	1,748
Netherlands	1,425	1,215
Saudi Arabia	507	1,055
Kyrgyzstan	529	901
Bahrain	35	121
Kuwait	63	121
Sweden	201	0
Jordan	20	45
Turkey	0	43

Spain	397	569
India	80	461
Macau	714	848
Italy	145	333
Laos	1,790	925
Cambodia	582	199
Japan	414	146
Brunei	6	121
Pakistan	138	22
Taiwan	0	21
Seychelles	0	20
Germany	115	72
Botswana	20	20
New Zealand	0	10
United States	0	49
Others	40	0
TOTAL	267,924	281,851
Source: China's Customs Statistics		

China Imports: Apples (HS 0808.1000) by Destination Volume (Metric Tons); MY1999/2000, MY 2000/2001		
Country	MY 1999/2000	MY 2000/2001
New Zealand	11,459	12,535
United States	10,464	19,461
Chile	1,737	2,845
Great Britain	0	15
Singapore	57	0
Taiwan	46	0
Australia	25	0
South Africa	193	0
Germany	38	0
France	41	0
Brazil	36	0
Others	4	0
TOTAL	24,100	34,856
Source: China's Customs Statistics		

China Exports: Grapes (HS 0806.1000) by Destination Volume (Metric Tons); MY2000, MY 2001		
Country	MY 2000	MY 2001
Russia	218	406
Vietnam	131	154
Hong Kong	26	140
Sri Lanka	0	31
Mongolia	12	10
Macau	0	5
Malaysia	9	5
Singapore	41	1
Others	0	0
TOTAL	437	752
Source: China's Customs Statistics		

China Imports: Grapes (HS 0806.1000) by Destination Volume (Metric Tons); MY2000, MY 2001		
Country	MY 2000	MY 2001
United States	34,475	27,393
Chile	6,859	24,978
Thailand	55	22
Canada	733	14
South Africa	234	0
Australia	1,264	0
New Zealand	516	0
Philippines	20	0
Others	0	1
TOTAL	44,156	52,408
Source: China's Customs Statistics		

China Exports: Pears and Quinces (HS 0808.20) by Destination Volume (Metric Tons); MY1999/2000, MY 2000/2001		
Country	MY 1999/2000	MY 2000/2001
Malaysia	39,451	44,612

Indonesia	16,715	31,853
Singapore	24,275	16,958
Hong Kong	19,706	22,493
Russia	7,954	10,042
Philippines	4,565	8,124
Vietnam	13,258	9,687
United States	2,820	6,579
Canada	2,625	5,635
Netherlands	1,164	2,049
Great Britain	1,100	1,625
Macau	890	1,657
Bangladesh	409	592
U.A.E.	520	816
Belgium	601	349
Thailand	1,622	664
Australia	1,365	1,077
Saudi Arabia	42	279
Taiwan	22	132
France	31	86
Jordan	0	86
Cambodia	87	78
South Korea	0	45
Sri Lanka	226	441
Sweden	20	72
Myanmar	757	683
Kazakhstan	17	36
Kyrgyzstan	10	86
India	50	48
Germany	51	106
Japan	9	13
Italy	152	70
Brunei	24	29
Egypt	45	40
New Zealand	106	61
Turkey	0	43
North Korea	2	11
Honduras	43	0
Mongolia	27	0
South Africa	23	0

Bahrain	27	0
Others	9	0
TOTAL	140,820	167,257
Source: China's Customs Statistics		

China Imports: Pears and Quinces (HS 0808.20) by Destination Volume (Metric Tons); MY1999/2000, MY 2000/2001		
Country	MY 1999/2000	MY 2000/2001
Japan	363	78
New Zealand	135	274
Chile	21	13
Thailand	25	0
Australia	29	0
Taiwan	26	169
South Korea	0	76
Malaysia	0	11
Others	51	0
TOTAL	650	620
Source: China's Customs Statistics		

China Exports: Apple Juice Concentrate (HS 2009.7000) by Destination Volume (Metric Tons); MY1999/2000, MY 2000/2001		
Country	MY 1999/2000	MY 2000/2001
United States	28,837	40,139
Netherlands	34,410	30,404
Japan	18,944	29,753
Australia	10,907	14,338
Germany	22,759	19,703
Canada	7,035	12,926
South Africa	5,499	2,691
Russia	2,512	10,380
Italy	4,217	0
Turkey	849	2,330
Taiwan	1,314	2,260
Great Britain	1,742	1,709
Poland	2,343	332

Romania	1,228	318
France	945	911
Mexico	213	1,013
Ukraine	2,546	62
Finland	940	599
South Korea	981	951
Austria	315	1,717
Israel	665	669
Sweden	523	80
Hong Kong	281	525
Spain	1,352	994
Denmark	527	142
Norway	0	158
Slovenia	258	40
Thailand	194	310
Saudi Arabia	110	264
India	77	212
Puerto Rico	76	154
Singapore	254	205
Mauritius	179	158
Kazakhstan	41	113
Malaysia	87	95
Dominican Rep.	42	62
Greece	20	59
New Zealand	59	98
Jordan	0	62
Ireland	79	20
Philippines	42	12
Argentina	0	59
Tunisia	0	38
Lebanon	0	19
Dominica	0	20
Egypt	0	19
Uzbekistan	0	5
Indonesia	0	5
Panama	0	10
North Korea	0	2
Others	13	2

TOTAL	153,415	177,147
Source: China's Customs Statistics		

HONG KONG RE-EXPORTS TO CHINA:
(Value: U.S.$ thousands, Volume: Metric Tons)
APPLES, FRESH:

Origin	MY 1999/2000		MY 2000/2001	
	Value	Quantity	Value	Quantity
United States	8,618	12,097	N.A.	N.A.
Chile	1,519	2,692	N.A.	N.A.
Netherlands	1,429	1,908	N.A.	N.A.
New Zealand	431	490	N.A.	N.A.
Australia	40	48	N.A.	N.A.
France	0	0	N.A.	N.A.
South Africa	32	56	N.A.	N.A.
Thailand	185	255	N.A.	N.A.
Brazil	47	109	N.A.	N.A.
Italy	36	69	N.A.	N.A.
Others	12	45	N.A.	N.A.
TOTAL	12,349	17,769	N.A.	37,772
Source: Hong Kong Re-export Statistics, Hong Kong Department of Census				

HONG KONG RE-EXPORTS TO CHINA:
(Value: U.S.$ thousands, Volume: Metric Tons)
GRAPES, FRESH:

Origin	CY/MY 1999		CY/MY 2000	
	Value	Quantity	Value	Quantity
United States	18,253	18,655	23,360	22,389
Chile	14,790	19,049	18,991	22,253
Australia	3,132	2,875	841	827
Thailand	121	152	285	487
South Africa	460	829	0	0
Canada	0	0	103	36
Iran	20	15	0	0
Malaysia	0	0	4	5
Ukraine	0	0	24	13
Others	0	0	655	508

TOTAL	36,776	41,575	44,263	46,518
Source: Hong Kong Re-export Statistics, Hong Kong Department of Census				

HONG KONG RE-EXPORTS TO CHINA:
(Value: U.S.$ thousands, Volume: Metric Tons)
PEARS AND QUINCES, FRESH:

Origin	MY 1999/2000		MY 2000/2001	
	Value	Quantity	Value	Quantity
United States	0	0	N.A.	N.A.
South Africa	15	26	N.A.	N.A.
Others	0	0	N.A.	N.A.
TOTAL	15	26	N.A.	888
Source: Hong Kong Re-export Statistics, Hong Kong Department of Census				

Trade Policy

After remaining unchanged for years, China's tariff rates for pears decreased. However, the tariff changes were small and the rates for both apples and grapes remained the same as last year. According to China's 2001 tariff schedule, Ya, Xue, and Xiang pears from countries with "most favored trading status" with China are taxed at 27 percent and other types of pears 26 percent. A year earlier, the rate was 30 percent for all types of pears. The Chinese tariff rates for imported apples and grapes remain unchanged at 30 and 40 percent respectfully. All imports into China are subject to a Value Added Tax and the rate for all varieties of fresh fruit is 13 percent.

With China's upcoming entry into the WTO, import tariffs on agricultural products are expected to fall in the near future. Based on the WTO accession agreement which China signed with the U.S., Chinese import tariffs by the year 2004 are expected to decrease to 10 percent for apples, 10 percent for pears, and 13 percent for grapes.

China agreed to allow the importation of fresh grapes from California growing areas in 1997. Californian grapes and Washington state apples currently are the only two U.S. deciduous fruits that are not restricted from entering China for phytosanitary reasons. As for other countries' deciduous fruit, China also allows the importation of Australian apples from Tasmania and certain varieties of New Zealand apples.

Despite some of the Chinese euphoria over imminent WTO membership, some Chinese agricultural officials and industry participants have concerns about the effects that membership and the organization's rules will have on their country's fruit growing industry. The general belief is that cheaper imported fruit will have a negative impact on industry development, slowing or preventing the industry's work towards improving the general

quality of domestic fruit.

Tariff Table

China's Official Tariff Rates for Fresh Deciduous Fruit

HS Code	Product	Prefer. Rate 1/	General Rate 2/	V.A.T. Tax 3/	Effective Rate 4/
0806.1000	Fresh Grapes	40	80	13	58
0808.1000	Fresh Apples	30	100	13	47
0808.2012	Fresh Ya and Xue Pears	27	100	13	44
0808.2013	Fresh Xiang Pears	27	100	13	44
0808.2019	Fresh Pears, Other	26	100	13	42
0808.2020	Quinces	18	100	13	33

Source: People's Republic of China Import/Export Management Measures, 2001 Edition
Notes:
1/ Preferential rate refers to the tariff rate charged against all products from countries with whom China has exchanged most favored nation trading status (i.e. U.S.A.).
2/ The General tariff rate refers to the tariff rate charged against all products from countries with whom China has not exchanged most favored nation trading status.
3/ V.A.T.: Value Added Tax. This tax is assessed on all imports entering China. It is assessed against the combined value of the imported products plus the tariff duty charges.
4/ The Effective tariff rate is the Preferential rate plus the Value Added Tax.

Marketing

Both domestic and imported fresh deciduous fruit can be found in wholesale and retail markets throughout China. While the amounts and varieties of imported fresh deciduous fruit have risen over the years, the same also can be said of domestic fruit. For domestic deciduous fruit, this development is largely due to improved distribution from the farm to the market. However, poor packing, transportation, and storage methods among the distributors and marketers of domestic fruit should continue to retain a market for imports in China.

Growers for many years mainly relied on local government offices and companies to buy and market their fruit. Growers at the same time did have (and still do) the opportunity to sell their fruit themselves at the local free markets, but competition among themselves for the same local customers and the high costs versus returns kept them from traveling too far away from their land to sell their crop at other locations. As a result, potential earnings were constrained. In addition, relatively small individual grower crops prevented direct sales to volume fruit buyers such as processors and exporters. Processors and exporters did not want the troubles involved with consolidating small purchases from a large numbers of growers.

The appearance of private distributors in the latter half of the 1990s has helped growers by giving them more sales options and better prices through greater buyer competition. Operating mainly during the harvest seasons,

these private distributors buy in major growing regions and then sell locally or to other parts of the country where supply of the products is not as great. The number of these private produce distributors in China is estimated at over 100,000 and the competition among them is fierce. According to one such private distributor in Shandong province and who sells locally, he usually earns only two Jiao ($0.02) per kilogram of fruit. When buying from growers, these distributors during the harvest season drive to growing areas and wait for growers to come to sell their produce.

Despite the appearance of new market participants in the distribution system, local government offices and companies have not been totally put out of business. Some have improved their service and prices to meet the competition. In addition, some volume buyers still rely on them, because of relationships between the volume buyer and the local government and, in locations quite distant from major urban areas, the local government office and/or company still may be the only big distributor buyer in the locale. However, the volumes of fruit handled by these offices and companies is low compared to total production.

Thanks to the enhanced distribution system, domestic fruit can now be found throughout the country and not solely in the regions where it is grown. According to the Shandong agricultural officials, approximately 70 percent of the province's fruit is distributed to other provinces. In regards to specific fruits, the breakdown is 75 percent of apples, 53 percent of pears, and 17 percent of grapes. These officials also say that their deciduous fruit sells well south of the Yangtse River and southern citrus fruit sells well in northern China.

An enhanced domestic distribution system has greatly helped China's fresh deciduous fruit industry, but limited use of proper packing techniques and storage facilities still acts as a constraint to the scale of further improvements. A large majority of domestic distributors operate with few facilities and prefer using large amounts of labor in place of capital. Consequently, fruit is stored in facilities at the prevailing air temperature and handled by people instead of machinery, often quickly degrading quality over time. Old underground bunkers, caves, and dirt pits remain widely used as storage sites for fruit. In addition, this arrangement tends to limit their operation period every year from around harvest to several months afterwards. In contrast, many domestic distributors and importers of overseas fruit maintain cold storage facilities to extend the sales period of their products.

According to China's Ministry of Agriculture, storage capacity for the country's total fruit production amounts to around 20 percent of each year's crop. This percentage includes simple on-site underground storage facilities. For fruit, Shandong and Shaanxi provinces have been leaders in constructing advanced storage facilities, i.e. refrigerated and controlled atmosphere storage. One source estimates that Shandong province's controlled atmosphere, refrigerated, and ventilated storage capacity for fruit equals 900,000 tons or approximately 20 percent of yearly fruit output. Advanced storage facilities seem to be quite prevalent in Yantai, Shandong's leading apple producing region. One industry source claims that Yantai's total controlled atmosphere storage is in the range of 70 to 80 thousand tons. The Ministry of Agriculture claims to be encouraging grower development of storage facilities, but believes that processing and distribution companies are better suitable for the task.

The general lack of proper storage and transportation facilities is often blamed for the high wastage rate of the apple crop every year. According to one recently published source, this rate was estimated to be as high as 20 to 25 percent. Sources at wholesale markets in northern China claim that at least 10 percent of their fruit usually goes unsold and turns into waste product.

Despite higher retail prices versus domestic produce, imported deciduous fruit still sells well in China. Many urban consumers, though price conscious, trust the quality of imports and are willing to pay higher prices. Import demand is usually highest before and during major holiday seasons, i.e. Mid Autumn Festival and Spring Festival/Chinese New Year, even when good quality domestic produce is available. Some distributors of domestic fruits recognize this fact and continue to try and take advantage of consumer beliefs by marketing domestic fruit in boxes marked overseas product or with overseas brand stickers on the fruit itself. For apples, using boxes marked as Enza (a major New Zealand fruit distributor) or "product of New Zealand" currently is an extremely popular practice. Box and sticker fraud has been a problem for many years in China.

PSD Tables and Trade Matrices

PSD Table						
Country	China, Peoples Republic of					
Commodity	Fresh Apples				(HA)(1000 TREES)(MT)	
	Revised1999		Preliminary2000		Forecast	2001
	Old	New	Old	New	Old	New
Market Year Begin		07/1999		07/2000		07/2001
Area Planted	2440000	2439000	2302000	2250000	0	2035000
Area Harvested	0	0	0	0	0	0
Bearing Trees	0	0	0	0	0	0
Non-Bearing Trees	0	0	0	0	0	0
Total Trees	0	0	0	0	0	0
Commercial Production	20800000	20801641	22050000	20430000	0	20050000
Non-Comm. Production	0	0	0	0	0	0
TOTAL Production	20800000	20801641	22050000	20430000	0	20050000
TOTAL Imports	24098	21532	22000	24100	0	34856
TOTAL SUPPLY	20824098	20823173	22072000	20454100	0	20084856
Domestic Fresh Consump	18806174	19394136	19787000	18245326	0	17647630
Exports, Fresh Only	267924	180939	285000	267924	0	281851
For Processing	1750000	1248098	2000000	1940850	0	2155375
Withdrawal From Market	0	0	0	0	0	0
TOTAL UTILIZATION	20824098	20823173	22072000	20454100	0	20084856

Export Trade Matrix		
Country	China, Peoples Republic of	
Commodity	Fresh Apples	
Time period		Units: Metric Tons

Exports for:	1999		2000
U.S.	0	U.S.	49
Others		Others	
Philippines	54823	Philippines	56552
Russia	53897	Russia	50318
Vietnam	37213	Myanmar	28907
Malaysia	25157	Indonesia	27696
Singapore	19372	Malaysia	25803
Myanmar	18765	Singapore	20571
Indonesia	12677	Thailand	13656
Thailand	11343	Hong Kong	11030
Hong Kong	6901	Vietnam	10106
Mongolia	5740	Mongolia	7285
Total for Others	245888		251924
Others not Listed	22036		29878
Grand Total	267924		281851

Import Trade Matrix			
Country	China, Peoples Republic of		
Commodity	Fresh Apples		
Time period		Units: Metric Tons	
Imports for:	1999		2000
U.S.	10464	U.S.	19461
Others		Others	
New Zealand	11459	New Zealand	12535
Chile	1737	Chile	2845
South Africa	193	Great Britain	15
Singapore	57		
Taiwan	46		
France	41		
Germany	38		
Brazil	36		
Australia	25		
Total for Others	13632		15395
Others not Listed	4		0
Grand Total	24100		34856

PSD Table	
Country	China, Peoples Republic of

Commodity	Concentrated Apple Juice (MT)					
	Revised 1999		Preliminary 2000		Forecast 2001	
	Old	New	Old	New	Old	New
Market Year Begin		01/1999		01/1999		01/1999
Deliv. To Processors	1750000	1248098	2000000	1940850	0	2155375
Beginning Stocks	0	0	0	0	0	0
Production	0	103000	0	173000	0	200000
Imports	0	681	0	481	0	594
TOTAL SUPPLY	0	103681	0	173481	0	200594
Exports	0	70710	0	153415	0	177147
Domestic Consumption	0	32971	0	20066	0	23447
Ending Stocks	0	0	0	0	0	0
TOTAL DISTRIBUTION	0	103681	0	173481	0	200594

Export Trade Matrix			
Country	China, Peoples Republic of		
Commodity	Concentrated Apple Juice		
Time period		Units: Metric Tons	
Exports for:	1999/2000		2000/2001
U.S.	28837	U.S.	40139
Others		Others	
Netherlands	34410	Netherlands	30404
Germany	22759	Japan	29753
Japan	18944	Germany	19703
Australia	10907	Australia	14338
Canada	7035	Canada	12926
South Africa	5499	Russia	10380
Italy	4217	South Africa	2691
Ukraine	2546	Turkey	2330
Russia	2512	Taiwan	2260
Poland	2343	Austria	1717
Total for Others	111172		126502
Others not Listed	13406		10506
Grand Total	153415		177147

PSD Table						
Country	China, Peoples Republic of					
Commodity	Fresh Table Grapes				(HA)(MT)	
	Revised1999		Preliminary	2000	Forecast	2001

	Old	New	Old	New	Old	New
	Market Year Begin			01/1999		01/1999
Area Planted	0	223240	0	283000	0	319800
Area Harvested	0	0	0	0	0	0
Commercial Production	0	2708127	0	3280000	0	3800000
Non-Comm. Production	0	0	0	0	0	0
TOTAL Production	0	2708127	0	3280000	0	3800000
TOTAL Imports	0	25859	0	44156	0	52408
TOTAL SUPPLY	0	2733986	0	3324156	0	3852408
Domestic Fresh Consump	0	2273248	0	2691519	0	3015656
Exports, Fresh Only	0	348	0	437	0	752
For Processing	0	460390	0	632200	0	836000
Withdrawal From Market	0	0	0	0	0	0
TOTAL UTILIZATION	0	2733986	0	3324156	0	3852408

Export Trade Matrix			
Country	China, Peoples Republic of		
Commodity	Fresh Table Grapes		
Time period		Units: Metric Tons	
Exports for:	1999		2000
U.S.	0	U.S.	0
Others		Others	
Russia	218	Russia	406
Vietnam	131	Vietnam	154
Singapore	41	Hong Kong	140
Hong Kong	26	Sri Lanka	31
Mongolia	12	Mongolia	10
Malaysia	9	Macau	5
		Malaysia	5
		Singapore	1
Total for Others	437		752
Others not Listed			
Grand Total	437		752

Import Trade Matrix		
Country	China, Peoples Republic of	
Commodity	Fresh Table Grapes	
Time period		Units: Metric Tons

Imports for:	1999		2000
U.S.	34475	U.S.	27393
Others		Others	
Chile	6859	Chile	24978
Australia	1264	Thailand	22
Canada	733	Canada	14
New Zealand	516		
South Africa	234		
Thailand	55		
Philippines	20		
Total for Others	9681		25014
Others not Listed	0		1
Grand Total	44156		52408

PSD Table						
Country	China, Peoples Republic of					
Commodity	Fresh Pears				(HA)(1000 TREES)(MT)	
	Revised	1999	Preliminary	2000	Forecast	2001
	Old	New	Old	New	Old	New
	Market Year Begin	07/1999		07/2000		07/2001
Area Planted	977000	976780	945000	1010000	0	1070600
Area Harvested	0	0	0	0	0	0
Bearing Trees	0	0	0	0	0	0
Non-Bearing Trees	0	0	0	0	0	0
Total Trees	0	0	0	0	0	0
Commercial Production	7740000	7742331	8050000	8400000	0	8820000
Non-Comm. Production	0	0	0	0	0	0
TOTAL Production	7740000	7742331	8050000	8400000	0	8820000
TOTAL Imports	650	9750	550	650	0	620
TOTAL SUPPLY	7740650	7752081	8050550	8400650	0	8820620
Domestic Fresh Consump	7199796	7186277	7490550	7839830	0	8212363
Exports, Fresh Only	140854	109004	150000	140820	0	167257
For Processing	400000	456800	410000	420000	0	441000
Withdrawal From Market	0	0	0	0	0	0
TOTAL UTILIZATION	7740650	7752081	8050550	8400650	0	8820620

Export Trade Matrix	
Country	China, Peoples Republic of
Commodity	Fresh Pears

Time period		Units:	Metric Tons
Exports for:	1999		2000
U.S.	2820	U.S.	6579
Others		Others	
Malaysia	39451	Malaysia	44612
Singapore	24275	Indonesia	31853
Hong Kong	19706	Hong Kong	22493
Indonesia	16715	Singapore	16958
Vietnam	13258	Russia	10042
Russia	7954	Vietnam	9687
Philippines	4565	Philippines	8124
Canada	2625	Canada	5635
Thailand	1622	Netherlands	2049
Australia	1365	Macau	1657
Total for Others	131536		153110
Others not Listed	6464		7568
Grand Total	140820		167257

Import Trade Matrix			
Country	China, Peoples Republic of		
Commodity	Fresh Pears		
Time period		Units:	
Imports for:	1999		2000
U.S.	0	U.S.	0
Others		Others	
Japan	363	New Zealand	274
New Zealand	135	Taiwan	169
Australia	29	Japan	78
Taiwan	26	South Korea	76
Thailand	25	Chile	13
Chile	21	Malaysia	11
Total for Others	599		621
Others not Listed	51		0
Grand Total	650		621