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Planting Seeds

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Report Highlights:

The planting seed situation in China has seen little change in terms of production. Consumption of non-staple planting seeds species is increasing. The Chinese government expects seed demand and supply will be met. China's import of improved planting seeds species is increasing. China's export of planting seeds decreased over the previous market year. Policy changes instituted over the last year are being implemented at relevant administrative levels.

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Executive Summary

The Ministry of Agriculture (MOA) reports that planting seed production did not encounter any disease problems during the past marketing year. Drought conditions over the last two years in non-commercial planting seed areas have reduced planting seed output. However, more commercial operations have started production programs in Western China. There are already many commercial planting seed production operations for export quality planting seeds. Production of major crop planting seeds should be adequate for the demand in 2002. However, 2002 production is likely to create a strong draw on hybrid species seed reserves.

Corn seed, grass seed, and vegetable seed species are discussed in separate sections of the report. The need for better quality and greater variety of these seed species continues to grow. China is eager to begin producing better planting seeds and crops through research and business enterprises with foreign companies and institutions.

Consumption of most major crop planting seeds is on a downward trend. Much of the change is a result of China's altering its agricultural production policy to lower subsidy costs, reduce government grain stocks, and to become more competitive once it joins the WTO. Also, farmers are using planting seeds that can produce higher value crops. Future planting seed needs will continue to be for new and better planting seed species. These new species would help China lower its cost on other agricultural inputs; including pesticides and fertilizers.

The policy section of this report includes information regarding seed industry changes since the introduction of the Seed Law and Implementation Regulations. There is new information regarding the seed and seed germ plasm reserve system, major crop approval, new variety protection, agricultural GMO planting seeds, seed quarantine, and tariffs.

This report has also provided some examples of current work that has been initiated to market and promote seeds in China.

China's planting seed imports grew 4 percent by volume and 18 percent by value in marketing year 2000/2001. Most foreign imported planting seeds are used in China's Eastern provinces. U.S. planting seed exports to China account for 31 percent of total import volume and 35 percent of total import value. Although the total import volume of U.S. planting seed exports to China increased by 3 percent, the total import value of U.S. planting seed exports to China decreased by 5 percent. This situation may continue into the future as China searches the market for cheaper priced planting seeds. China's planting seed exports decreased 13 percent by volume and 10 percent by value in marketing year 2000/2001.

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Production

The MOA reports that planting seed production did not encounter any disease problems during the past marketing year. Drought conditions over the last two years in non-commercial planting seed areas has reduced planting seed output. However, more commercial operations have started production programs in Western China. There are already many commercial planting seed production operations for export quality planting seeds. Production of major crop planting seeds in 2001 should be adequate for demand in 2002. News reports indicate, however, that reserves of hybrid seeds will be lower than in previous years.

The government has not needed to increase procurement of planting seeds or grains due to already sufficient stocks. China has had little difficulty meeting planting seed needs for staple grains. In addition, planting acreage for staple grains is decreasing. China has had little difficulty finding domestically produced seeds when disease or unfavorable weather conditions has necessitated re-sowing. There is no indication that farmers have converted field crop production into field-grains planting seeds production. Grains prices are stable or slightly higher than last year. The price increases for grains have been caused by two relatively bad years of wheat and corn production and an increase in grains used for animal feed.

Most of the soybeans produced in the Northeast go towards bulk commodity use. Soybean seed production areas in East China do not have favorable weather conditions and are at greater risk of disease. Rapeseed area has grown, but China has supplied this seed source from domestic supplies. Peanut seed needs have also been met by domestic production. China has imported soybean planting seeds and sunflower planting seeds over the last few years. However, import volumes this year are down from last year.

Corn Seed

Chinese commercial corn production is divided into two areas: Northeastern China and Eastern China. Northeastern China often plants corn seed in spring while Eastern China often plants corn seed in the summer. Different corn seed varieties are needed to meet the diverse soil, climate, and growing conditions of the two areas. Post sources indicate that less corn seed was produced in Northeastern China due to adverse weather conditions and the need to use land for non-seed corn production. The long summer drought had a negative impact on corn seed production in Eastern China's summer corn seed planting areas of Shandong and Hebei provinces. Reports indicate corn seed shortages are likely in these areas for next year, as well.

However, Western and Northwestern provinces of Inner Mongolia, Gansu, and Ningxia are commercial corn seed production areas. These areas produced adequate corn seed to meet the seed shortfalls that occurred in commercial corn production areas of Northeastern China and Eastern China. The MOA and news reports indicate that China will not have any problems finding domestic sources for corn seed in the near future. News reports reveal that the government has ample supplies of hybrid corn seed in reserve.

The production of hybrid corn seeds in 2001 was estimated at 700,000 metric tons. The year 2000 ending stock of hybrid corn seed was 147,000 MT (however, 20 percent of the ending stock is converted to commercial grains). The expected supply of hybrid corn seed for 2002 is estimated at 817,000 MT while demand for hybrid corn seed in 2002 is estimated at 775,000 MT.

If planted area remains near similar levels, the overall draw on corn seed should push corn seed prices higher next year. However, the demand for corn seed has slowly been tapering away as Chinese take land out of corn area. In another 5 to 10 years, some sources indicate that Chinese annual demand for corn seed will be down from the estimated 1.08 million MT at present to an estimated 900,000 MT.

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China's future corn seed needs will be for feed corn, high-protein corn, high-oil corn, and other special variety corns. It is expected that China will need to import the seed for all these varieties, but at the present time imports of corn seed are prohibited due to concerns for low risk pathogens (see Policy Section). The American Seed Trade Association is attempting to work with the Chinese MOA, on a project for pest risk assessment. Once the project is finalized, it should pave the way for trade and exchange of corn seed between the U.S. and China

Grass Seed

The Chinese Grassland Society reports that China has 392 million hectares of natural grasslands and another 10 million of artificial grasslands. China's dependency on foreign countries' grass seed species is likely to continue for some time. This is due to policies being carried out at both the national and provincial level. However, more domestic and foreign grass seed operations are developing production bases in China.

In several provinces, grassland improvement campaigns are being conducted jointly with efforts to increase forests and forest belts. China set 2001 targets for returning farmland to forests and grasslands at 5 million mu (330,000 hectares). The 2001 goals for planting wastelands and hillsides with grass and trees was 7.4 million mu (490,000 hectares). At the end of June 2001, China had completed 56 percent of the conversion of farmland to forests and grasslands, and 49 percent of the grass and tree planting on wastelands and hill sides.

It is estimated that Inner Mongolia will need to reclaim 1 million hectares of grassland over the next 8 to 10 years. Grass needs in Inner Mongolia are for forage and reclamation. Yunnan Province intends to plant 30,000 hectares of hillside water erosion grasses and hillside forage grasses by the end of 2005. Then, by the end of 2010, Yunnan intends to plant an additional 1 million mu (67,000 hectares) of grassland. Guizhou Province, in Southern China, initiated a 1 million mu (67,000 hectare) grassland construction project in 2001. Most of this construction project is aimed at improving forage grass. Guizhou started using idle fields to grow forage grasses, also. Beijing is looking to plant 28,000 hectares of turf and erosion control grasses around highways and waterways for city beautification and Olympic preparation by 2008. In arid areas of Shanxi Province, the government has returned 1.2 million mu (80,000 hectares) to forests and grasslands since April 2001. Gansu Province, an arid but well irrigated seed production base for many crops, has converted over 10,500 hectares of land to forests and grasslands since 2000.

China does not have many large scale commercial grass seed production enterprises. There are problems with land availability, a lack of appropriate varieties, cultivation technology, and other resources; including staff expertise and financing. To meet these pitfalls, one recent news release indicated that several Chinese grass seed companies have joined together and formed a new venture to begin producing grass seed in Western China. The development of forage grass seed production bases in Inner Mongolia and Gansu provinces has been carried out for some time. Sources indicate that these forage seed cultivars are not suitable to all environments and reports indicate that the resultant forage planting seeds will be directed towards the domestic market.

There is little management or effective enforcement of grazing rights on grasslands that belong to the national government. Farmers graze animals on land without any concept of grazing rights nor applicable laws; including the Agriculture Law (CH1048), the Forestry Law (CH1054), and the Grasslands Law (published in 1986, but now under revision). Inner Mongolian grasslands are managed differently than grasslands in the remainder of the country. In Inner Mongolia, the national government contracts grasslands to villages. Then, within the village, the grassland is divided and managed by individuals. In other provinces, farmers graze animals on grasslands or plateaus that are far away from towns in the summer and then move animals closer into

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towns when winter weather makes animal management more difficult.

China is raising more livestock and including forage grasses as a livestock feed source. News sources report that annual forage demand for livestock is 10 million MT. China, however, only produces 2 million MT of forage a year. In addition, forage demand is expected to increase at a rate of 10 percent per year. As a result, the import demand for forage grass seed should be higher next year.

Reports reveal that 135 million hectares of grasslands in China face threat from desertification, salinization, or other degradation. The Chinese government plans to expend 1 billion RMB for the development and preservation of grasslands annually. The expenditures will take the form of bonds, cash subsidies, and grain subsidies to farmers.

The national government is very concerned with reclamation of desert lands and barren hillsides. The desert soil that blows into Beijing is a blight or at the very least a sore spot for the central government. The government would like to see more shelter belts around the national capital and other major cities to hold loose soil in place and improve local air quality and visibility.

Effective management of soil and water resources also seems to be a concern for the central government. In areas of China that do not suffer from desertification or wind erosion, water quality and water erosion of soil appears to be an equally pervasive problem. Provincial governments seem interested in preventing water erosion with suitable grasses being planted on sloped land, steep roadsides, and railway embankments. In many instances, the Ministry of Communications and the Ministry of Railways oversee these programs. In addition, the idea of planting grasses as a buffer crop between canals and large fields has been proposed by non-Chinese government officials. The goal of such a program would be to prevent chemical run-off and to draw hazardous elements out of the soil.

As China's first tier and second tier cities introduce greening campaigns for roadsides, parks, and recreation areas, the demand for turf grass seed will increase. These first- and second-tier cities often have "Greening Campaign" offices. Much of the turf seed is planted in demonstration areas outside of these cities. The sod is then cut, rolled, and later applied to the areas where it is needed. Sod application and management needs improvement. Many local seed importers and local seed companies provide management training to grass seed end-users. Grass management and technical expertise from foreign company grass seed suppliers is appreciated.

The large increases in grass seed imports have heightened Chinese government interest in grass-seed-borne diseases. The government plant quarantine requirements for grass seed are becoming more onerous. Phytosanitary certificates with language requiring grass seeds and planting seeds to be free from specific diseases is required. Exporters should carefully discuss import requirements with buyers prior to shipment. Additionally, quarantine officials on visits to the U.S. and other nations often gather disease information from seed breeders.

Forage grass imports are at record levels. This is despite the fact that China initiated a temporary suspension of Alfalfa, Red Clover, and White Clover imports in April from the U.S., Canada, Mexico, New Zealand, Japan, and all of Europe for alleged risk of *Verticillium albo-atrum*. The import suspension was initiated after China's quarantine officials reported discovering the disease in a shipment of Canadian grass seed. The import suspension is now lifted. Also, last spring, Chinese trade officials ordered a shipment of U.S. origin grass seed to be treated after discovering a dead rodent in the shipment. However, due to large Chinese demand, industry sources do not feel that further import restrictions are likely in the near future.

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U.S. share of grass seed exports to China have lost market share to Canada, Denmark, and the Netherlands. Some industry sources believe that companies from other nations are dumping grass seed on the Chinese market. Other sources report that China, a very price conscious market, has instead chosen to import poorer quality grass seeds; particularly from Canada. European companies have been selling grass seed at lower prices and are still able to earn profits through the assistance of European government subsidies.

The Chinese Grassland Society in coordination with several agricultural universities and research centers will hold the China International Grassland Conference from May 20-24, 2002 in Beijing. The conference will feature scientific sessions for forages, ecology and turf, and an additional industry forum and exhibition. The conference is the most noted of its kind for Chinese grasslands.

In summary, post expects Chinese imports of grass seed for forage, reclamation, and turf will be greater next year. Over the long-term, however, forage grass seed species imports will not grow as quickly as they have during the past several years. This is due to growing Chinese production of forage species. Chinese ability to produce good quality turf and reclamation species is still far behind that of developed nations. The long-term prospects for turf and reclamation species exports to China is good.

Vegetable Seed

Vegetable and cash crop planting seeds production in China is profitable and continues to grow. In some areas, planting seeds production of cash crops is very competitive between local farmers who vie for premiums from foreign companies. Foreign firms pay farmers premiums, sometimes as high as 50 percent above local market price, to produce planting seeds for export. The premiums ensure better management; including disease prevention and variety protection for product germ plasm. Foreign firms continue to pay these premiums because these seeds sell for higher prices on the international market. However, this style of operation is becoming increasingly more difficult because of disease prevention and control-related problems. The production areas for export-oriented planting seed production are being inundated with firms. These firms often lack control mechanisms for seed borne diseases and these diseases quickly affect surrounding areas. This, in turn, forces seed production companies to look for new areas in which to grow planting seeds. Another alternative that some industry sources have considered is producing crops for seed in sheltered facilities and Western style green houses.

Much of the vegetable seed production that is developed for the export market occurs in China's Northwest Gansu Province. Gansu is a mountainous area, free from most pollution, that has an abundant labor supply. The area has little rainfall, but adequate underground water supply due to snow melt off of area mountain and hillside peaks. There are several international companies and local companies producing seed in this area.

Imported vegetable seed, most often, is destined for China's Eastern provinces. Shou Guang, an area of Eastern China's Shandong province, has converted land to year-round vegetable production. Shou Guang and other areas of China have been developing year-round agriculture through the use of green houses or sheltered facilities. Shou Guang has several international companies using foreign origin seed and producing demonstration crops in the area. The demonstration creates interest from local and other domestic growers to buy foreign company seeds. Shou Guang also has a large vegetable and seed show for foreign and domestic companies to exhibit products.

Local government officials report that seed germ plasm from Japan, South Korea, Iceland, Switzerland, and Israel has benefitted vegetable production in this area. There is some use of U.S. planting seed, but local

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industry representatives are unaware of the quality and variety of U.S. vegetable planting seeds.

Seed production and vegetable markets are managed under the municipal government vegetable office. The Shou Guang municipal vegetable office scheme has been replicated thru vegetable production bases in other provinces. The vegetable office in Shou Guang and in the ones in other areas have the ability to influence what vegetable crops farmers grow, what vegetable seeds farmers use, and where the vegetables and resultant vegetable seeds are traded.

Consumption

Calendar year 2000 estimates for China's planting seed annual sales was \$2.42 billion and 12.5 million MT. Thirty percent of the 12.5 million MT originates from commercial production. Another large proportion of the seed use is from non-commercial domestic production. This non-commercial domestic production is planting seed that farmers grow, keep, and plant for individual use in the next crop year. Estimates for calendar year 2001 sales volume and sales value are not yet available.

In Shandong province, one of China's leading agricultural provinces, the Provincial Seed Management Station estimates that farmers purchase sixty to seventy percent of their wheat seed, fifty percent of their cotton seed, and fifty percent of their peanut seed. The remaining planting seed needs are met with seed supplies from farmers' own storage or reserve. Also, in Shandong province, more land is being dedicated to green house or sheltered facility crop production for suitable crop species. This will enable farmers to plant some crops three or four times a year. This should increase the use of vegetable seeds and other suitable seeds for green houses and sheltered facilities. What is happening in Shangdong is typical of what is happening throughout much of China.

Seed Use for some Major Crops								
Units in 1,000 MT	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02*
Total Rice Seed	7,220	7,680	7,530	7,050	7,200	7,000	7,000	NA
Total Wheat Seed	4,720	4,850	5,060	5,020	5,020	5,000	4,800	4,600
Total Corn Seed	1,500	1,430	1,270	1,210	1,230	1,150	1,100	1,080
Total Soybean Seed	NA	NA	867	870	850	900	845	880

^{*}Projected seed use

Source for Wheat, Corn, Rice Seed Data: East West Consultants Newsletter, Sept. 24, 2001.

Source for Soybean Seed Data: East West Consultants Newsletter, Oct. 8, 2001.

Total Sown Areas of Farm Crops in Ch Units: 1000 hectares	ina		
Species	1999/2000	2000/2001	2001/2002
Rice	31,284	29,962	30,550
Wheat	28,855	26,653	26,000
Corn	25,904	23,056	23,500
Soybeans area from WAOB	8,000	9,100	9,000
Peanuts	4,268	4,855	4,600

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Rapeseed	6,899	7,494	8,050
Cotton	3,726	4,041	4,249
Sugar Beet	341	329	392
Vegetables	13,347	15,237	NA
Fruit	8,667	8,932	NA

Source: Data for 1999 and 2000 originates from China's National Statistic Bureau. All soybean data and data for 2001 is from USDA GAIN Attache reports and analysis. F:\bransona\lotus\seeds\nsbplntrea.wk4

Policy

Seed Law and Implementation Regulations

According to most industry sources, China's new Seed Law (CH0031) and Seed Law Implementation Regulations (CH1018 and CH1052) promised positive changes for China's planting seed situation. Most sources, however, suggest that it will be very difficult for the law to be implemented and enforced uniformly throughout the country. Industry sources report the law and regulations have provided for small-, medium-, and large-sized operations to be treated equally. Some believe the Law is too rigid and could restrict some of China's western development (the main commercial planting seed production area).

China's entry into the World Trade Organization should have little impact on China's planting seed situation. Most industry sources believe, with time, China's WTO accession will lead to strengthened cooperation with foreign companies that have good seed variety, good seed variety germ plasm, and good planting seed commercialization and distribution.

According to the MOA, since the Seed Law and Seed Law Implementation Regulations were published, there are no new laws being drafted or amended that would have a significant impact on the planting seed industry. The national government has been drafting laws that could have a minor impact on grass species planting seeds. Earlier this year, the Chinese government released a new Desertification Law. The law will take affect on January 1, 2002. A Chinese language version of the law is available in Chinese bookstores. The government is also drafting a new Grasslands Law. The previous Grasslands Law was completed in 1986. This new version should be general and suggest amendments to the pre-existing law. Copies of the draft are not available. Post expects that these laws will restrict grazing and use of grasslands that could, in turn, create an environment for limited scale grass seed production.

Stocks and Reserves

China's Seed Law, article 7, states that the country will create a seed storage and reserve system. The seed reserve system, however, has been in place for some time. Seeds that are placed in reserve will be released to the market and replaced over a period of time. The government intends to give preference to domestic source seed species and seed species that are proven useful in the relevant ecological environment. The seed storage and reserve system applies to major crops; e.g rice, wheat, corn, soybean, cotton, rape, and potato and the other 1 or 2 major crops of the different administrative areas.

Currently, the national seed reserve system is managed by the government and held by provincial seed companies. The national government mandates the volume and variety of seed that must be held and provincial seed companies are required to act on that mandate. The government also pays the interest on corporate bank loans needed to purchase seeds for the seed reserve. The provincial seed companies can buy and release seed as needed, but are supposed to maintain the reserve levels. It appears the government has some difficulty

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monitoring how much seed is in the reserve. This is because not all provincial seed companies are in compliance with the government mandate. The details (e.g. variety, volume, locations) of the reserve system have not been released yet. Post has been informed that when information is available, the national government intends to make the seed reserve system transparent. The national government has indicated that the seed reserve system will change. The details of the change have not been released, either.

Some industry representatives feel the seed reserve system could be better managed in an open market by seed companies. However, the government is not likely to remove itself from the seed storage and reserve system. The national government believes that the involvement in the seed reserve system furthers its food security policy. Another reason is that a government-regulated seed reserve system would ensure farmers a stable seed price and reliable seed source with guaranteed seeds. In addition, the government wants to ensure seed sources in the event of disasters.

The Seed Law and Implementation Regulations decree that China will establish a national seed germ plasm bank. The germ plasm bank already exists. Chinese press estimates reveal that the germ plasm banks in China now have over 333,000 samples.

Major Crop Seed Approval

Previously, large field crop seed production (e.g. wheat, corn, rice, soybean, cotton, etc.) could only be done under special permits issued by China's MOA. Now, any company that meets Seed Law capital requirements, meets equipment requirements, submits an application, and receives MOA approval, can produce field crop seeds. Until now, there has been no immediate impact because few seed enterprises have knowledge or experience dealing with these major crops.

Under China's Seed Law and Seed Law Implementation Regulations, the government, through the MOA, can strengthen the regulations for seed examination, seed approval, seed production licenses, and seed management licenses for those crops that are considered major crops. However, provinces, autonomous regions, and nationally recognized municipalities can designate another one or two additional crops as major crops. This clause allows these regions to protect the important local seed industry by forcing applicants for examination, approval, production, or management licenses to undergo more extensive examinations. Another aim is to prevent farmers from using non-certified seeds that could lead to crop failures or disease outbreaks. Non-major crop seeds may be distributed and extended for use without provincial scale or national scale testing.

Provincial level bureaus are scheduled to submit the seed species for protection by the end of November, 2001 to the MOA. At present, only a few provinces have submitted their list of seeds to protect as a major crop. The following is the current list of major crops planting seeds protected under the Seed Law.

Nationwide registered major crop planting seed species		Rice, Wheat, Corn, Soybean, Cotton, Rapeseed, Potato			
Beijing Municipality	Large White Cabbage, Watermelon	Hunan Province	Hot Peppers, Watermelon		
Jiangxi Province	Watermelon	Liaoning Province	Sorghum		
Shandong Province	Large White Cabbage, Peanut	Sichuan Province	Sweet Potato		
* Other area's major crop planting seed species are unavailable					

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Planting Seed Industry Reforms

According to media reports, there are an estimated 70,000 seed enterprises in China; included in this number are 2,700 state-owned seed companies. Most seed enterprises operate with small assets and face significant challenges from large domestic operations and foreign seed firms. There are around 30 seed companies with registered assets in excess of 10 million RMB (8.265 RMB equals 1 U.S. dollar). This capital is important because it allows companies to apply for management licenses necessary for the import and export of seeds. It is estimated that 80% of China's seed enterprises have registered assets under 100,000 RMB. It is now more necessary that these smaller planting seeds companies rely on industry leaders for research, international trade, and domestic distribution.

It seems that most state-owned provincial seed companies lack research and development operations as well as large-scale distribution. Provincial seed companies that want to survive will need to merge with other companies or go out of business if they do not change their operational method. Additionally, county level seed companies are increasingly becoming dealerships for large scale or foreign seed production companies.

According to a recently published paper at The First International Forum on the Globalization of China's Seed Industry there are over 60 foreign-funded joint ventures or wholly foreign-owned enterprises engaged in China's seed business. The paper also discusses some past and planned changes to the Catalogue for the Guidance of Foreign-funded Investment Industries. One of the 1997 changes to the catalogue was the requirement that the Chinese side of seed production enterprises maintain majority control of projects. A possible change to the next Catalogue would be to prohibit foreign investment from projects that produce GMO seeds.

New Variety Protection

China agreed to the 1978 version of the legislation for the International Union for the Protection of New Varieties of Seeds (UPOV) in April 1999 (CH9026). China has not yet agreed to the more recent versions of UPOV. The introduction of China's Seed Law and ensuing Seed Law Implementation Regulations has encouraged more applications for new plant variety protection. Once the appropriate administrative departments rule on applications, the list of newly protected new plant varieties will be released to the public in a government decree. The most recent decree of new plant variety protection was issued February 26, 2001. The list included the following planting seed species *Cymbidium Sw.* (Orchid), *Lilium L.* (Lily), *Strelitzia Ait*. (Bird-of-Paradise), and *Limonium Mill.* (Sea Lavender).

Since China agreed to UPOV, the Department of Sciences and Education at the MOA has received 412 total applications for new plant varieties through October 31, 2001. According to the MOA, there have been 53 planting seed species that have received new plant variety protection. As of June 30, 2001, the Department of Sciences at the State Forestry Bureau had received 172 total applications from China's accession to UPOV. There has been no indication when the next list of new plant variety protection will be released.

The MOA reports that most new applications are for corn, rice, and vegetable species. Some foreign enterprises have expressed reservation over submitting their highest quality and newest variety seeds for new plant variety examination to the government. One reason is that the government has not finished severing ties with many of the provincial seed companies. However, if companies do not submit the most modern seed species, the seed risks not being accepted for new variety protection.

GMO Seeds

China's regulation on agricultural GMOs (CH1024 and CH1056) is of great concern to most international

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producers and traders. The industry is still waiting for China to release its GMO Implementation Regulations that are now under review by administrative authorities in the Chinese government.

There are several procedural requirements that must be met before using GMO crop seeds in China. One requirement is that the GMO crop seed must undergo a safety evaluation and obtain approval from the MOA. However, if the GMO crop seed is considered a major crop by the national government or by an administrative area, the crop seed must also undergo the approval process for major crops. Another requirement is that production or marketing operations that produce GMO seeds or sell GMO seeds must first submit an application and then receive permission from the MOA.

Official reports reveal that, by the end of 1996, Chinese GMO plant research was conducted on a total of 47 different species of plants and involved 103 different genes (CH0046). The percentage of land planted with GMO crops in China is still very small. Press reports have said that GMO planted area in China is less than one percent of the world total GMO planting area. As of now, GMO cotton, GMO tobacco, GMO hot peppers, GMO tomatoes, and GMO flowers have passed GMO safety evaluation by the MOA. GMO cotton has also undergone major crop approval at the national level. Pest-resistant or GMO cotton seed is the only species of GMO plant that has received permission for commercial production or marketing. There have been no production or marketing operations that have submitted applications to the MOA for any other GMO crop seeds. GMO crop seed that is under scientific research or trial testing can be planted on limited areas of land. GMO corn seed (Bt Corn) is under trial planting.

It is plausible that some producers or marketers of GMO crop seeds have produced or sold GMO seeds without approval from the MOA. One example is tobacco seed. Post has heard that many tobacco growers are using GMO tobacco seed. However, the MOA has not granted any companies permission to produce or sell this seed to growers. The seed is likely from growers' or suppliers' own stocks that was released before the GMO regulations were announced. The other possibility is that the GMO tobacco seed has entered through gray channels. In the future, more GMO seeds (not only tobacco) may enter the market through gray channels. This may cause the government to control the stages of trial testing and known GMO seed production sites more strictly.

Seed Quarantine

Planting seed quarantine label requirements have become more onerous. One example is that planting seeds phyto-sanitary label requirements have been changed to indicate that seed shipments are free from specific diseases. In the past, phytosanitary label requirements only indicated that seeds were free from disease. This change now places the burden on exporters to have seeds examined for individual diseases before being sent to China. It appears the impetus for this change was that many Chinese ports were unable to check for each plant borne seed disease. It appears that some of the phytosanitary certificates or container labels are not in compliance with the new requirements, but Post has not been informed of any shipments encountering problems at Chinese ports. U.S. exporters should verify the full set of import requirements with foreign customers before any goods are shipped. U.S. exporters should also work with their local APHIS officials when seed shipments are ready for export.

Quarantined planting seeds still prohibited from entering the People's Republic of China are corn seed and soybean seed. Corn (*Zea mays*) seed imports from Vietnam, Thailand, CIS, Poland, Switzerland, Italy, Romania, Canada, Mexico, and the United States are prohibited because of concerns about *Erwinia stewartii*. Soybean seed (*Glycine max*) imports from Japan, Europe, Great Britain, France, CIS, Germany, Canada,

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Australia, New Zealand, and the United States are prohibited due to concerns over *Phytopthora megasperma*. However, according to China Customs statistics, Canada, has still been able to export over 2,600 MT of Soybean seed to China even with the restrictions in place. Japan, too, has sent 20 kilograms of soybean seed to China. The lower quantity Japanese shipment was most likely destined for research purposes.

Quotas, Tariffs, and Value Added Taxes

According to the MOA, there is no quota for planting seed imports. However, grass seed industry sources have reported that the Value Added Tax methodology and assessment on grass seeds has acted as a quota. The VAT methodology and assessment on grass seeds may also be an issue for national treatment concern once China is a member of the World Trade Organization. (It appears that domestically produced grass seeds are not assessed the Value Added Tax).

All grass seed importers must submit the required customs quarantine form if they intend to import grass seeds into China. If importers submit this form, only then they must pay a VAT equal to 13 percent of the CIF cost. If, the importer wishes to bring grass seed into China VAT free, the importer must submit a VAT-free import permit application to the MOA. Some seed industry sources believe that state-owned companies or former state-owned companies have had an easier time receiving this VAT free import permit. If the importer does not receive MOA approval, the importer must pay the VAT. All grass seed importers must pay the Value Added Tax once the VAT free limit is surpassed.

The government reportedly set a limit of 10,000 MT of grass seed that could be imported VAT free in 2001. The 2002 VAT free limit has not been announced. The 2001 limit was supposed to be announced in January, however, the Chinese government did not release the 2001 limit until the end of September. As a result, any importer that brought grass planting seeds into China between January and September was assessed a "guarantor fee" equal to the expected value of VAT. Companies that then received import permits should have the "guarantor fee" refunded to them by port authorities. The procedure to have the "guarantor fee" refunded is not clear and has resulted in problems for some importers.

The delayed VAT free limit announcement and the entire VAT assessment or "guarantor fee" makes it difficult for seed importing companies to import or begin signing contracts with U.S. or other foreign exporters. The Chinese governments delay may have upset trade and helped bolster domestic grass seed producers.

Import tariffs are expected to change once China joins the World Trade Organization. Post will re-issue information on the tariffs when the best negotiated tariff rates are made public.

China Plantir	ng Seed Customs Tariff Rates					
Tariff Line	Description of Goods	Tarif	f Rate	Tariff Line	Description of Goods	Tariff Rate
						_
1001.9010	Wheat Seed for Planting	114%	*	1209.1100	Sugar Beet Seed	0%
1002.0010	Rye Seed for Planting	0%		1209.1900	Other beet Seed	0%
1003.0010	Barley Seed	91.2%	*	1209.2100	Alfalfa Seed	0%
1004.0010	Oats for Planting	0%		1209.2200	Clover Seed	0%
1005.1000	Corn Seed for Planting	40%	*	1209.2300	Fescue Seed	0%
1006.1010	Rice Seed for Planting	114%	*	1209.2400	Kentucky Blue Grass	0%
1007.0010	Sorghum for Planting	0%		1209.2500	Rye Grass	0%
1008.9010	Other Cereal Seed for Planting	0%		1209.2600	Timothy Grass	0%

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1201.0010	Soybean Seed for Planting	114%	*	1209.2900	Other Forage Seed	0%	
1202.1010	Peanut in Shell for Planting	0%		1209.3000	Herbaceous Seed	0%	
1205.0010	Rape Seed for Planting	40%	*	1209.9100	Vegetable Seed	0%	
1206.0010	Sunflower for Planting	0%		1209.9900	Fruit and Other Seed	0%	
1207.2010	Cotton Seeds for Planting	0%					

^{*} Indicates the import goods are subject to quota limit control. However, no quota limit has been established. Therefore, the resulting tariff rate is zero percent.

Source: China Customs

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Marketing

Chinese researchers, importers, and growers acknowledge that U.S. species planting seeds are of high quality. However, they also note that the cost associated with high quality often limits buyers from purchasing American produced planting seeds. When they are able to buy the seeds, some note that they are unable to purchase the other necessary inputs that give seeds better results.

One Chinese seed importer conducted a turf grass landscape trial on the grounds of a European embassy. The Chinese importer benefitted from controlled conditions that reaped positive results. The importer expects that the landscape trial could further increase demand for the European company grass seed. A different company provided grass seed to a recreation area for a North American embassy. The grass seed was very suitable for the area, however, the embassy did not properly manage the turf once the seed was applied. This underlines one of the problems for the grass seed industry in China. Management of grass seeded areas and sod application areas needs improvement.

The Oregon Seed Council is conducting several programs to promote Oregon produced grass seed. The Oregon Seed Council has conducted scientific exchanges, evaluation of land suitability for grass seed species, research, and discussions with several ministries and bureaus at all administrative levels.

Seed management stations and vegetable production offices want foreign companies to create demonstration sites or sheltered facilities in China to exhibit products. The products would be grown with foreign company or joint venture seed. Another option would be for foreign companies to provide planting seeds to the seed management station or vegetable production office. These Chinese government offices are often willing to manage the demonstration site on the foreign companies behalf. The offices will plant the foreign variety seeds to exhibit resulting products to visitors. The goal would then be to promote commercial purchase and use of these seeds in other green houses or sheltered facilities throughout the country.

Trade

China's planting seed imports grew both by volume (4 percent) and value (18 percent) in marketing year 2000/2001. Marketing year 2000/2001, seeds of grains and oilseeds continued declining. Reasons for the decline in imports include decreases in planting acreage and the introduction of better quality domestic seed. Cotton seed imports continue to grow sharply from a small base. The impressive increase in beet seed imports over last marketing year still does not reach levels from marketing year 1998/1999. The current sugar beet seed import surge comes from improved European varieties and an overall rise in sugar prices. For the last several years, grass seeds imports increased at over 70 percent per year. It appears that the greatest need is in forage grasses and erosion control grasses, but turf grass seed also shows a bright future. Herbaceous seed imports continue to rise. The sharp decrease in vegetable seed imports comes after a peak import marketing year in

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1999/2000. The sharp decrease in vegetable seed imports, almost entirely from Japan, is in large part due to trade and political disputes between the two countries. Japan had been sending vegetable seed to China to produce vegetables and vegetable seed for re-export to Japan. Vegetable seed imports are now lower than levels seen two years ago. The value of fruit seed imports continued declining, but volume shows stable growth.

China's 2000/2001 total planting seed exports decreased by both volume (13 percent) and value (10 percent). Exports of grain planting seed species showed the strongest growth in corn, rice, and other grain crops. Oilseed species decreased sharply after peaking in market year 1999/2000. Cotton seed exports have fallen sharply from levels seen two years ago. China stopped exporting other beet seeds in 2000/2001 and started trading sugar beet seeds. Forage grass and forage plant seed exports have increased strongly. Vegetable seed and fruit seed exports have also increased steadily.

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Summary Trade Data

Imports by Seed Family and Annual Changes

Imports by Seed Family and Annual Changes, MY 1999/2000 MY 2000/2001 (volume: KG) (value: US\$)

World MY 1999/2000 MY 2000/2001 Change

worla	M 1 199	9/2000	M Y 200	JU/2001	Chai	ige	
	volume	value	volume	value	volume	value	
Grains&Oilseeds	4,253,472	\$8,495,006	3,887,350	\$7,328,984	-9%	-14%	
Cotton	1,458	\$6,316	11,761	\$19,919	707%	215%	
Beets	3,226	\$59,802	353,161	\$1,071,145	10847%	1691%	
Grasses	9,175,317	\$19,828,559	15,735,206	\$29,199,122	71%	47%	
Herbaceous	480,149	\$1,938,345	594,012	\$2,346,709	24%	21%	
Vegetables	10,436,975	\$27,271,750	4,172,295	\$30,296,752	-60%	11%	
Fruits	726,111	\$2,843,621	1,208,670	\$1,203,878	66%	-58%	
TOTAL	25,076,708	\$60,443,399	25,962,455	\$71,466,509	4%	18%	
U.S.	MY 199	99/2000	MY 200	00/2001	Change		
	volume	value	volume	value	volume	value	
Grains&Oilseeds	1,012,790	\$4,936,215	656,489	\$3,607,928	-35%	-27%	
Cotton	998	\$6,208	998	\$2,722	0%	-56%	
Beets	38	\$577	16	\$42	-58%	-93%	
Grasses	6,406,602	\$15,014,602	7,107,163	\$15,980,541	11%	6%	
Herbaceous	17,630	\$913,492	24,036	\$908,572	36%	-1%	
Vegetables	315,175	\$4,625,426	241,288	\$3,904,438	-23%	-16%	
Fruits	193,728	\$595,697	134,555	\$407,810	-31%	-32%	

Source: China Customs

TOTAL

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7,946,961

(In the following tables, note that post has also added trade tables for oat seed and rye crop seed that were not previously included in this report. China is an exporter of these planting seed species).

\$26,092,217

8,164,545

\$24,812,053

3%

-5%

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Summary of China's Planting Seed Imports MY 2000/2001 - World versus U.S. by Species

Summary of China's Planting Seed Imports MY2000/2001-World versus U.S. by Species

(volume: KG) (value: US\$)

	World		United	States	U.S. Share		
	volume	value	volume	value	volume	value	
Wheat	14	\$8	0	\$0	0%	0%	
Rye Crop	0	\$0	0	\$0	0%	0%	
Barley	603	\$1,502	0	\$0	0%	0%	
Oats	0	\$0	0	\$0	0%	0%	
Corn	34,830	\$271,857	0	\$0	0%	0%	
Rice	9,751	\$14,061	0	\$0	0%	0%	
Sorghum	19,180	\$34,659	231	\$1,829	1%	5%	
Other Cereal Grain	125	\$98	0	\$0	0%	0%	
Soybean	2,637,980	\$909,623	0	\$0	0%	0%	
Peanut	6	\$2	0	\$0	0%	0%	
Rape Seed	0	\$0	0	\$0	0%	0%	
Sunflower	1,184,861	\$6,097,174	656,258	\$3,606,099	55%	59%	
Cotton	11,761	\$19,919	998	\$2,722	8%	14%	
Sugar Beet	352,990	\$1,067,683	6	\$10	0%	0%	
Other Beet	171	\$3,462	10	\$32	6%	1%	
Alfalfa	5,052,533	\$9,099,618	900,911	\$2,462,049	18%	27%	
Clover	719,585	\$1,306,289	42,046	\$121,818	6%	9%	
Fescue	3,181,878	\$5,155,824	2,351,409	\$3,892,194	74%	75%	
Kentucky	2,429,104	\$6,923,680	2,106,529	\$6,112,704	87%	88%	
Rye Grass	2,346,396	\$2,077,415	881,067	\$956,777	38%	46%	
Timothy	52,301	\$190,156	40,426	\$144,099	77%	76%	
Other Forage	1,953,409	\$4,446,140	784,775	\$2,290,900	40%	52%	
Herbaceous	594,012	\$2,346,709	24,036	\$908,572	4%	39%	
Vegetable	4,172,295	\$30,296,752	241,288	\$3,904,438	6%	13%	
Fruit & other Seed	1,208,670	\$1,203,878	134,555	\$407,810	11%	34%	
TOTAL	25,962,455	\$71,466,509	8,164,545	\$24,812,053	31%	35%	

^{1/} Marketing year from July to June

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Summary of China's Planting Seed Exports by Species

Summary of China's Planting Seed Exports by Species, MY 1999/2000 AND MY 2000/2001 (volume: KG) (value: US\$)

	MY 1999/2000			MY 200	0/2001	Change		
	volume	value		volume	value	volume	value	
Wheat	535,000	\$123,209		36,106	\$6,841	-93%	-94%	
Rye Crop	200	\$48		23,000	\$10,787	11400%	22373%	
Barley	115	\$191		61,520	\$20,804	53396%	10792%	
Oats	41,000	\$15,190		18,600	\$6,696	-55%	-56%	
Corn	18,699	\$41,649		1,061,440	\$566,943	5576%	1261%	
Rice	5,164,101	\$6,322,310		7,418,480	\$7,729,404	44%	22%	
Sorghum	4,461,406	\$497,051		291,970	\$61,803	-93%	-88%	
Other Grain	276,205	\$111,544		1,218,380	\$231,012	341%	107%	
Soybean	2,916,480	\$951,010		86,030	\$46,089	-97%	-95%	
Peanut	1,318,175	\$701,714		98,261	\$49,172	-93%	-93%	
Rape Seed	19,955	\$8,788		10	\$11	-100%	-100%	
Sunflower	231,168	\$146,005		156,781	\$56,377	-32%	-61%	
Cotton	131	\$307		209	\$543	60%	77%	
Sugar Beet	0	\$0		1,608	\$1,609	0%	0%	
Other Beet	3,058	\$5,450		0	\$0	-100%	-100%	
Alfalfa	175,626	\$237,147		220,100	\$266,686	25%	12%	
Clover	5,800	\$14,306		3,300	\$1,711	-43%	-88%	
Fescue	0	\$0		0	\$0	0%	0%	
Kentucky	25	\$500		0	\$0	-100%	-100%	
Rye Grass	0	\$0		0	\$0	0%	0%	
Timothy	15,576	\$7,605		33,886	\$29,596	118%	289%	
Other Forage	1,159,819	\$1,692,912		2,218,801	\$3,645,976	91%	115%	
Herbaceous	667,063	\$4,684,814		346,883	\$4,584,831	-48%	-2%	
Vegetable	2,440,320	\$29,380,332		3,275,137	\$23,116,507	34%	-21%	
Fruit & Other Seed	1,032,459	\$2,607,301	F	1,183,209	\$2,573,124	15%	-1%	
TOTAL	20,482,381	\$47,549,383	-	17,753,711	\$43,006,522	-13%	-10%	

Source: China Customs

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Imports Wheat Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Turkey	()	\$0	\$7
Mexico	((\$0	\$1
Others	200) (\$1,338	\$0
Total	200) 14	\$1,338	\$8

Rve Crop Seed

Kye Crop Seed					
Rye Crop Seed In (MY 1999/2000-	mports by Origin 2000/2001) (Kilograms,	USD) (HS Code: 1	002.0010)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001	
	volume	volume	value	value	
Total		0	0	0	0
Source: China Cuf:\shared\lotus\se	ustoms eeds\trade\01\ryecropsee	ed0001.wk4			

Barley Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Australia	2	4 50	0 \$12	\$1,487
France		0 10	0 \$0	\$14
Mexico		0	3 \$0	\$1
Others	10,00	0	0 \$7,850	\$0
Total	10,02	4 60	3 \$7,862	\$1,502

Oat Crop Seed

Oat Crop Seed					
Oat Crop Seed In (MY 1999/2000-2	nports by Origin 2000/2001) (HS Code:	1004.0010) (Kilograr	ms, USD)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001	
	Volume	Volume	Value	Value	
Total		0	0	\$0	\$0
Source: China Cu	istoms eds/trade/oatcropseed00	001.wk4			

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Corn Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Argentina	5,652	9,723	\$49,920	\$85,127
France	9,207	8,566	\$46,162	\$16,378
Germany	6,432	7,406	\$119,908	\$106,121
Chile	110	2,565	\$1,536	\$34,419
India	13	1,654	\$23	\$4,483
Others	3,984	4,916	\$37,216	\$25,329
Total	25,398	34,830	\$254,765	\$271,857

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Rice Seed

Mice Beeu				
Rice Seed Impo (MY 1999/2000	orts by Origin 0-MY 2000/2001) (Kilogran	ns, USD) (HS 1006.10	010)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Thailand	3,720	9,730	\$3,348	\$13,899
Japan	1,560	21	\$34,024	\$162
Total	5,280	9,751	\$37,372	\$14,061
Source: China (f:\shared\lotus\	Customs seeds\trade\01\rcemyqi0001	.wk4		

Sorghum Seed

Sorghum Seed Im				
(MY 1999/2000-I	MY 2000/2001) (Kilogra	ms, USD) (HS 1007.0	010)	_
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Australia	19	18,600	\$1,015	\$30,506
Japan	16	0 349	\$155	\$2,324
United States		0 231	\$0	\$1,829
Total	35	0 19,180	\$1,170	\$34,659
Source: China Cu f:\shared\lotus\se	ıstoms eds\trade\01\shmmyqi00	01.wk4		

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Other Cereal Grains Crop Seed

Other Cereal Grains ((MY 1999/2000-MY			010)		
MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 2000/2001					
	volume	volume	value	value	
China	128	125	\$100	\$98	
Others	6	0	\$25	\$0	
Total	134	125	\$125	\$98	

Source: China Customs

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Soybean Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Canada	2,504,970	2,637,960	\$992,059	\$909,075
Japan	0	20	\$0	\$548
United States	1,523	0	\$609	\$0
Others	167,900	0	\$33,392	\$0
Total	2,674,393	2,637,980	\$1,026,060	\$909,623

Peanut Seed

	ports by Origin 0-2000/2001) (Kilogram,	USD) (HS 12	202.1010)		
	MY 1999/2000	MY 2000	/2001 MY 199	9/2000 MY 20	000/2001
	volume	volume	value	value	
India		0	6	\$0	\$2
Total		0	6	\$0	\$2
Source: China (f:\shared\lotus\	Customs seeds\trade\01\peantqi00	01.wk4	•		

Rape Seed

Rape Seed Imports b				
(MY 2000/2001-200	0/2001) (Kilogram, US	SD) (HS 1205.0010)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Total	0	0	0	
Source: China Custo	ms \trade\ransdgi0001.wk	4		

Sunflower Seed

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	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
United States	1,011,267	656,258	\$4,935,606	\$3,606,099
Argentina	20	414,899	\$176	\$1,847,918
Australia	120,973	50,245	\$363,569	\$165,741
India	259,000	50,079	\$1,137,842	\$217,835
Israel	10,200	6,959	\$61,400	\$52,929
Others	136,233	6,421	\$577,721	\$206,652
Total	1,537,693	1,184,861	\$7,166,314	\$6,097,174

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Cotton Seed

Cotton Seed Impo (MY 1999/2000-2	orts by Origin 2000/2001) (Kilogram,US	D) (HS 1207.2010)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Israel	460	10,760	\$108	\$17,195
United States	998	998	\$6,208	\$2,722
Greece	0	3	\$0	\$2
Total	1,458	11,761	\$6,316	\$19,919
Source: China Cu	ustoms eds\trade\ctnmvai0001 wl	×Δ		

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Sugar Beet Seed

(MY 1999/2000-I	MY 2000/2001) (Kilogram	ı, USD) (HS 1209.110)0)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	Volume	Volume	Value	Value
Germany	846	324,421	\$470	\$815,782
France	0	20,000	\$0	\$100,000
Belgium	2,047	8,271	\$42,765	\$151,533
Sweden	61	292	\$429	\$358
United States	38	6	\$577	\$10
Other	226	0	\$15,417	\$0
Total	3,218	352,990	\$59,658	\$1,067,683

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Other Beet Seed

Other Beet Seed Im	ports by Origin			
(MY 1999/2000-M	Y 2000/2001) (Kilogran	n, USD) (HS 1209.19	00)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Japan	0	90	\$0	\$1,000
Germany	6	51	\$3	\$280
Netherlands	0	20	\$0	\$2,150
United States	0	10	\$0	\$32
Others	552	0	\$386	\$0
Total	558	171	\$389	\$3,462

Source: China Customs f:\shared\lotus\seeds\trade\01\otbmyqi0001.wk4

Alfalfa Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Canada	180,607	3,400,820	\$382,898	\$5,499,194
United States	335,548	900,911	\$1,129,433	\$2,462,049
Pakistan	20,000	240,000	\$21,955	\$259,523
Italy	0	220,000	\$0	\$360,700
Germany	0	184,000	\$0	\$311,900
Netherlands	73,875	89,850	\$171,769	\$175,207
Denmark	0	8,000	\$0	\$13,920
France	0	7,000	\$0	\$11,550
Hungary	0	1,950	\$0	\$5,572
Japan	0	2	\$0	\$3
Other	70	0	\$362	\$0
Total	610,100	5,052,533	\$1,706,417	\$9,099,618

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Clover Seed

Clover Seed Imports (MY 1999/2000-MY	by Origin 2000/2001) (Kilogram	ı. USD) (HS 1209.220	00)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
New Zealand	113,377	300,488	\$229,472	\$537,318
Australia	168,005	196,000	\$332,038	\$352,050
Denmark	61,700	89,800	\$135,955	\$183,550
Canada	74,100	71,250	\$84,458	\$76,113
United States	82,060	42,046	\$209,664	\$121,818
Germany	1,000	20,000	\$1,566	\$32,960
Netherlands	3,000	1	\$5,984	\$2,480
Total	503,242	719,585	\$999,137	\$1,306,289

Source: China Customs

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Fescue Seed

Fescue Seed Imports (MY 1999/2000-MY	by Origin 2000/2001) (Kilogram	n, USD) (HS 1209.230	00)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
United States	2,251,020	2,351,409	\$3,466,927	\$3,892,194
Denmark	192,872	610,900	\$289,929	\$929,262
Netherlands	65,075	156,296	\$110,925	\$228,441
Canada	20,166	57,323	\$30,842	\$92,736
Hungary	2,000	4,000	\$5,960	\$10,161
Others	95	1,950	\$496	\$3,030
Total	2,531,228	3,181,878	\$3,905,079	\$5,155,824

Source: China Customs f:\shared\lotus\seeds\trade\01\fesmyqi0001.wk4

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Kentucky Blue Grass Seed

(1,11 1000, 2000 1	MY 2000/2001) (Kilogran	MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 2000/2			
	volume	volume	value	value	
United States	1,689,523	2,106,529	\$5,058,952	\$6,112,704	
Denmark	288,900	302,640	\$637,010	\$768,185	
New Zealand	0	19,935	\$0	\$42,791	
Canada	32,026	5,176	\$82,747	\$11,802	
Netherlands	1,300	2,475	\$2,895	\$5,371	
Others	12,500	0	\$24,489	\$0	
Total	1,978,423	2,429,104	\$5,695,962	\$6,923,680	

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Rye Grass Seed

Rye Grass Seed Impo (MY 1999/2000-MY	orts by Origin /2000/2001) (Kilogram,	, USD) (HS 1209.250	0)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
United States	1,079,214	881,067	\$1,610,033	\$956,777
Netherlands	382,725	479,070	\$288,043	\$313,266
Denmark	265,450	432,012	\$265,188	\$380,393
Germany	25,000	320,000	\$23,026	\$222,332
New Zealand	21,000	177,083	\$20,290	\$151,802
Australia	5,000	33,600	\$4,200	\$25,184
France	0	12,000	\$0	\$5,400
Hungary	1,500	11,010	\$5,118	\$21,371
Canada	4,021	550	\$6,417	\$883
Sweden	0	4	\$0	\$7
Other	20,000	0	\$13,000	\$0
Total	1,803,910	2,346,396	\$2,235,315	\$2,077,415

Source: China Customs

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Timothy Grass Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
United States	25,188	40,426	\$55,122	\$144,099
Netherlands	12,000	6,145	\$17,880	\$16,260
Denmark	1	4,000	\$1	\$21,920
New Zealand	2,000	1,200	\$12,560	\$6,576
South Korea	0	356	\$0	\$1,013
Australia	0	124	\$0	\$120
Syria	0	50	\$0	\$168
Other	50,828	0	\$140,186	\$0
Total	90,017	52,301	\$225,749	\$190,156

Other Forage Plants Seed

Other Forage Plants Seeds Imports by Origins (MY 1999/2000-MY 2000/2001) (Kilogram, USD) (HS 1209.2900) MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 2000/2001

	volume	volume	value	value
Canada	315,592	954,966	\$574,930	\$1,670,622
United States	944,049	784,775	\$3,484,471	\$2,290,900
Denmark	283,900	99,000	\$611,440	\$183,305
Australia	4,050	33,750	\$19,438	\$94,110
Netherlands	7,651	23,965	\$61,773	\$79,680
South Africa	20,000	19,325	\$110,000	\$48,313
New Zealand	5,000	8,750	\$19,920	\$41,908
Others	32,329	28,878	\$68,497	\$37,302
Total	1,612,571	1,953,409	\$4,950,469	\$4,446,140

Source: China Customs

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Herbaceous Plants Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Netherlands	195,884	275,859	\$400,146	\$410,752
Taiwan	142,321	196,671	\$333,366	\$552,705
United States	17,630	24,036	\$913,492	\$908,572
Brazil	10,488	22,280	\$3,287	\$7,107
Mexico	21,927	14,620	\$5,721	\$3,749
Australia	34,043	10,399	\$11,999	\$8,535
South Africa	16,890	7,533	\$4,356	\$3,041
Others	40,966	42,614	\$265,978	\$452,248
Total	480,149	594,012	\$1,938,345	\$2,346,709

Vegetable Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Thailand	1,549,345	1,869,797	\$2,648,285	\$2,672,442
Australia	984,890	878,615	\$2,327,662	\$2,166,883
Japan	6,827,472	807,183	\$11,540,719	\$13,206,573
United States	315,175	241,288	\$4,625,426	\$3,904,438
New Zealand	309,574	163,378	\$465,035	\$302,678
South Korea	72,306	71,870	\$2,096,989	\$2,827,903
Hong Kong	204,531	39,356	\$878,527	\$84,896
Netherlands	57,056	33,890	\$461,778	\$860,647
Taiwan	22,619	28,517	\$790,109	\$1,247,144
Denmark	28,555	9,231	\$115,590	\$60,458
Vietnam	2,000	7,008	\$2,000	\$7,423
Others	63,452	22,162	\$1,319,625	\$2,955,269
Total	10,436,975	4,172,295	\$27,271,745	\$30,296,752

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Fruit and Other Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Taiwan	281,606	552,299	\$1,794,462	\$118,574
Belgium	7,500	300,000	\$13,132	\$255,000
United States	193,728	134,555	\$595,697	\$407,810
Myanmar	48,000	108,000	\$2,706	\$7,828
France	10,003	50,508	\$10,046	\$79,910
Australia	79,265	24,292	\$38,950	\$35,195
Netherlands	27,909	15,076	\$21,706	\$15,853
Mexico	4,360	5,754	\$1,666	\$9,873
India	358	2,465	\$3,439	\$33,312
Indonesia	25,596	1,688	\$13,858	\$1,798
Mauritius	9,340	1,466	\$17,215	\$1,802
Others	38,804	12,567	\$334,183	\$236,923
Total	726,469	1,208,670	\$2,847,060	\$1,203,878

Exports Wheat Seed

	orts by Destination MY 2000/2001) (Kilogram	n, USD) (HS 1001.902	10)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
North Korea	515,000	36,000	\$119,609	\$6,805
Nigeria	0	106	\$0	\$36
Others	20,000	0	\$3,600	\$0
Total	535,000	36,106	\$123,209	\$6,841

Rye Crop

Kye Crop				
	xports by Destination 2000/2001)(Kilograms, U	SD) (HS Code: 1002.0	0010)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
North Korea	200	23000	\$48	\$10,787
Total	200	23000	\$48	\$10,787
Source: China Cu	istoms eds\trade\01\rvecronseed	0001 wk4		

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Barley

Barley Seed Exports l	y Destination			
(MY 1999/2000-MY	2000/2001) (Kilogram	, USD) (HS 1003.001	10)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
North Korea	0	61520	\$0	\$20,804
Japan	115	0	\$191	\$0
Total	115	61520	\$191	\$20,804

Source: China Customs

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Oat Crop

	MY 1999/2000	MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 200			
	Volume	Volume	Value	Value	
North Korea	2,000	18,600	\$700	\$6,696	
Others	39,000	0	\$14,490	\$0	
Total	41,000	18,600	\$15,190	\$6,696	

Corn

Vietnam 0 500,000 \$0 \$57 Bangladesh 0 1,000 \$0 \$1 Pakistan 20 440 \$20 Others 18,679 0 \$41,629		rts by Destination			
volume volume value value Thailand 0 560,000 \$0 \$508 Vietnam 0 500,000 \$0 \$57 Bangladesh 0 1,000 \$0 \$1 Pakistan 20 440 \$20 Others 18,679 0 \$41,629 Total 18,699 1,061,440 \$41,649 \$566	(MY 1999/2000-	-MY 2000/2001) (Kilogran	n, USD) (HS 1005.100	00)	
Thailand 0 560,000 \$0 \$508 Vietnam 0 500,000 \$0 \$57 Bangladesh 0 1,000 \$0 \$1 Pakistan 20 440 \$20 Others 18,679 0 \$41,629 Total 18,699 1,061,440 \$41,649 \$566		MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
Vietnam 0 500,000 \$0 \$57 Bangladesh 0 1,000 \$0 \$1 Pakistan 20 440 \$20 \$20 Others 18,679 0 \$41,629 \$41,649 \$566 Total 18,699 1,061,440 \$41,649 \$566		volume	volume	value	value
Bangladesh 0 1,000 \$0 \$1 Pakistan 20 440 \$20 Others 18,679 0 \$41,629 Total 18,699 1,061,440 \$41,649 \$566	Thailand	0	560,000	\$0	\$508,475
Pakistan 20 440 \$20 Others 18,679 0 \$41,629 Total 18,699 1,061,440 \$41,649 \$566	Vietnam	0	500,000	\$0	\$57,390
Others 18,679 0 \$41,629 Total 18,699 1,061,440 \$41,649 \$566	Bangladesh	0	1,000	\$0	\$1,000
Total 18,699 1,061,440 \$41,649 \$566	Pakistan	20	440	\$20	\$78
	Others	18,679	0	\$41,629	\$0
Source: China Customs	Total	18,699	1,061,440	\$41,649	\$566,943
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Rice

Rice Seed Exports		LICD) (LIC 1000 10	24.0)	
(MY 1999/2000-1	MY 2000/2001) (Kilogram MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Vietnam	4,321,520	7,216,190	\$5,213,305	\$7,449,948
Philippines	1,003	60,480	\$1,009	\$100,714
Sierra Leone	0	50,000	\$0	\$24,162
Bangladesh	240,531	39,695	\$604,624	\$97,891
Guinea	195,000	37,000	\$214,099	\$40,700
Cambodia	90	14,409	\$41	\$13,567
Others	405,957	706	\$289,232	\$2,422
Total	5,164,101	7,418,480	\$6,322,310	\$7,729,404
Source: China Cu	stoms			

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Sorohum

	xports by Destination MY 2000/2001) (Kilogram	ns, USD) (HS 1007.00	010)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Japan	9,226	210,540	\$15,329	\$45,310
Belgium	0	59,430	\$0	\$13,640
South Korea	0	20,000	\$0	\$2,562
North Korea	150	2,000	\$257	\$290
Nigeria	0	0	\$0	\$1
Others	4,452,030	0	\$481,465	\$0
Total	4,461,406	291,970	\$497,051	\$61,803
Source: China Conf:\shared\lotus\se	ustoms eeds\trade\01\shmmyqe000	1.wk4		

Other Grain Crop

	ed Exports by Destinat 2000/2001) (Kilogram)10)	
(NTT 1000/2000 NTT	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
South Korea	0	1,080,000	\$0	\$177,020
Japan	144,705	118,500	\$50,475	\$50,142
Thailand	0	19,880	\$0	\$3,850
Others	202,520	0	\$61,069	\$0
Total	276,205	1,218,380	\$111,544	\$231,012
Source: China Custor	ns			

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Soybean

Soybean Seed Export (MY 1999/2000-MY	rts by Destination Y 2000/2001) (Kilogram	ı, USD) (HS 1201.00	10)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Japan	2,910,480	76,030	\$949,760	\$39,889
North Korea	5,000	10,000	\$1,250	\$6,200
Total	2,915,480	86,030	\$951,010	\$46,089
Source: China Custo	oms			

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Peanut

	ports by Destination 0-2000/2001) (Kilogram, US	5D) (HS 1202.1010)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Portugal	351,920	45,000	\$196,292	\$18,900
Greece	0	31,800	\$0	\$16,668
Malaysia	0	20,790	\$0	\$13,081
Indonesia	0	671	\$0	\$523
Others	966,255	0	\$505,422	\$0
TOTAL	1,318,175	98,261	\$701,714	\$49,172
Source: China (Customs			

Rape Seed

	orts by Destination -2000/2001) (Kilogram, U	SD) (HS 1205.0010)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Taiwan	(10	\$0	\$11
Others	19,955	0	\$8,788	\$0
TOTAL	19,955	10	\$8,788	\$11
Source: China C f:\shared\lotus\s	Customs seeds\trade\rapsdqe0001.wl			

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Sunflower Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Malaysia	122,120	63,787	\$53,443	\$22,220
Indonesia	41,000	47,215	\$14,330	\$13,158
Japan	1,393	42,586	\$41,808	\$18,081
France	0	1,500	\$0	\$2,400
Hong Kong	0	1,348	\$0	\$295
Others	66,662	345	\$36,424	\$223
Total	231,175	156,781	\$146,005	\$56,377

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Cotton Seed

Cotton Sood Exports	by Doctination				
Cotton Seed Exports		TD) /IIC 1007 0010)			
(MY 1999/2000-200	0/2001) (Kilogram, US	D) (HS 1207.2010)			
	MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 200				
	volume	volume	value	value	
Japan	3	209	\$20	\$543	
Others	128	0	\$287	\$0	
Total	131	209	\$307	\$543	
Source: China Custo	ms \trade\01\ctnmvge0001	_			

Sugar Reet Seed

	d Exports By Destination 0-MY 2000/2001) (Kilogra	am,	USD) (HS 1209.110	00)	
	MY 1999/2000	N	/Y 2000/2001	MY 1999/2000	MY 2000/2001
	Volume	V	olume	Value	Value
Belgium		0	1607	\$0	\$1,608
Nigeria		0	1	\$0	\$1
Total		0	1608	\$0	\$1,609
Source: China (f:\shared\lotus\	Customs seeds\trade\01\sgrmyqe00	01.v	vk4		•

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Other Beet Seed

Other Beet Seed Exp (MY 1999/2000-MY	orts by Destination 2000/2001) (Kilogram	ı, USD) (HS 1209.190	00)		
	MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 2000/200				
	volume	volume	value	value	
Others	3,058	0	\$5,450		\$0
Total	3,058	0	\$5,450		\$0
Source: China Custo	ms	1.4			

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Alfalfa Seed

	orts by Destination MY 2000/2001) (Kilogran	n, USD) (HS 1209.210	00)	
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Japan	169,846	220,000	\$230,151	\$266,361
North Korea	770	100	\$2,324	\$325
Others	5,010	0	\$4,672	\$0
Total	175,626	220,100	\$237,147	\$266,686
Source: China Cu	istoms			

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Clover Seed

Clover Seed Expor (MY 1999/2000-M	rts by Destination IY 2000/2001) (Kilogram	ı, USD) (HS 1209.220	00)		
	MY 1999/2000	MY 1999/2000 MY 2000/2001 MY 1999/2000 M			
	volume	volume	value	value	
Japan	0	3,300	\$0	\$1,711	
Others	5,800	0	\$14,306	\$0	
Total	5,800	3,300	\$14,306	\$1,711	
Source: China Cus	stoms ds\trade\01\clymygi0001	.wk4			

Fescue Seed

rescue secu					
	orts by Destination MY 2000/2001) (Kilogr	ram, USD) (HS 1209	.2300)		
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001	
	volume	volume	value	value	
Total		0	0	\$0	\$0
Source: China Cu	stoms eds\trade\01\fesmvqi00	01.wk4			

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Kentucky Blue Grass Seed

Kentucky Blue Grass Seed Exports by Destination (MY 1999/2000-MY 2000/2001) (Kilogram, USD) (HS 1209.2400)					
	MY 1999/2000 MY 2000/2001 MY 1999/2000 MY 200				
	volume	volume	value	value	
Others	25	0	\$500		\$0
Total	25	0	\$500		\$0
Source: China Custon	ns				

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Rye Grass Seed

(MY 1999/2000-M	IY2000/2001) (Kilogra					
	MY 1999/2000	MY 2000/200	1 MY 1999	N/2000 N	IY 2000/2001	
	volume	volume	value	va	alue	
Total		0	0	\$0		\$0

Timothy Grass Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Netherlands	0	12,900	\$0	\$11,304
South Korea	15,480	10,986	\$6,396	\$14,292
Japan	0	10,000	\$0	\$4,000
Others	96	0	\$1,209	\$0
Total	15,576	33,886	\$7,605	\$29,596

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Other Forage Plants Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
Japan	617,473	1,092,347	\$949,737	\$1,368,726
South Korea	322,572	963,858	\$472,972	\$2,100,665
United Kingdom	17,069	90,900	\$6,354	\$16,422
Netherlands	141,486	49,005	\$156,797	\$75,341
United States	10,000	22,268	\$39,500	\$83,858
Others	51,219	423	\$67,552	\$964
Total	1,159,819	2,218,801	\$1,692,912	\$3,645,976

Herbaceous Plants Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
South Korea	129,837	193,185	\$657,112	\$684,787
Netherlands	45,932	85,074	\$252,481	\$487,132
Japan	217,018	51,810	\$3,054,051	\$2,450,426
United States	4,713	7,853	\$17,159	\$64,551
Germany	37,514	6,091	\$116,911	\$59,882
France	4,940	1,417	\$57,831	\$24,601
Denmark	86	652	\$72,727	\$553,349
Others	237,023	801	\$456,542	\$260,103
Total	677,063	346,883	\$4,684,814	\$4,584,831

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Vegetable Seed

	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
South Korea	370,381	815,520	\$4,438,196	\$5,025,207
Indonesia	58,944	745,651	\$213,244	\$621,977
Japan	447,805	395,483	\$1,971,421	\$1,602,702
Netherlands	281,811	286,249	\$3,322,299	\$2,165,408
United States	462,105	261,357	\$13,361,195	\$9,848,697
Taiwan	129,642	191,112	\$1,593,406	\$684,693
Thailand	25,533	128,671	\$96,886	\$159,579
Hong Kong	147,561	91,913	\$154,830	\$96,509
France	73,332	73,600	\$874,379	\$605,153
Malaysia	26,560	47,601	\$100,305	\$151,173
Italy	143,178	39,898	\$2,029,729	\$637,427
Belgium	20,155	38,362	\$327,875	\$460,218
Vietnam	36,441	35,287	\$50,640	\$53,430
Spain	19,646	29,572	\$19,648	\$71,565
Germany	7,274	28,888	\$13,899	\$29,720
Australia	1,002	17,972	\$18,309	\$38,714
Singapore	9,641	11,565	\$25,987	\$50,918
Russia	0	8,494	\$0	\$48,948
Nepal	0	6,000	\$0	\$725
Bangladesh	6,043	4,355	\$188,709	\$182,483
India	1,768	3,940	\$197,631	\$322,420
Pakistan	2,248	3,319	\$16,862	\$41,224
Sri Lanka	76	1,965	\$134	\$24,960
Denmark	9,542	1,845	\$124,764	\$22,022
North Korea	151,000	1,500	\$75,960	\$12,750
Others	8,632	5,018	\$164,024	\$157,885
Total	2,440,320	3,275,137	\$29,380,332	\$23,116,507

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Fruit and Other Seed

Fruit and Other See	d Exports by Destinatio	n		
(MY 1999/2000-MY 2000/2001) (Kilogram, USD) (HS 1209.9900)				
	MY 1999/2000	MY 2000/2001	MY 1999/2000	MY 2000/2001
	volume	volume	value	value
South Korea	613,846	659,914	\$1,285,011	\$958,023
Japan	363,686	408,851	\$943,023	\$1,220,813
Germany	282	77,798	\$8,047	\$47,688
Taiwan	6,132	17,571	\$42,603	\$129,791
United States	11,354	7,752	\$127,068	\$123,035
Gabon	0	4,000	\$0	\$1,699
Netherlands	27,657	2,873	\$52,842	\$33,540
Myanmar	0	1,298	\$0	\$2,033
Belgium	0	876	\$0	\$3,726
North Korea	0	500	\$0	\$2,398
Others	9,502	1,776	\$148,707	\$50,378
Total	1,032,459	1,183,209	\$2,607,301	\$2,573,124

Source: China Customs

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