

Voluntary Report – Voluntary - Public Distribution

Date: January 11, 2022

Report Number: CH2022-0005

Report Name: Planting Seed 2021 Annual

Country: China - People's Republic of

Post: Beijing

Report Category: Planting Seeds, Agricultural Situation, Agriculture in the News, Biotechnology - Plants and Animals, MISC-Commodity

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Report Highlights:

The planting seed sector remains a priority for the People's Republic of China (PRC). The PRC government released new measures and policies to support and improve the operating environment for the domestic seed industry throughout 2021. Most notably the Seed Law was amended and includes the establishment of an essentially derived variety (EDV) program along with additional intellectual property rights (IPR) measures. In addition, China announced policies that will pave the way for domestic development and production of genetically engineered (GE) crops. The United States remained the largest seed supplier to China, providing 53 percent of all imported seed.

I. GENERAL SITUATION

China is the second largest seed market in the world, behind the United States and annually plants 12 million metric tons (MMT) of seed, with a market value of \$19 billion¹. The seed usage of seven key crops (corn, rice, wheat, soybean, cotton, potato, and rapeseed) is approximately 10 MMT, with a market value of \$13 billion. Commercially marketed seed accounts for an average of 70 percent of China's planted seed for the above-mentioned crops with the remainder being farm-saved seed collected from the previous harvest. The market share of commercially marketed seed varies by commodity with a high of 88 percent for cotton seed to a low of 40 percent for seed potatoes. According to official PRC reports, the country is self-sufficient in rice and wheat seed and nearly self-sufficient in corn and soybean seed. While domestic vegetable varieties continue to improve, they still do not meet the diversified needs of the market and China imports 15 percent of all its vegetable seed.

II. POLICY

Seed Law Amended

On December 24, the final amendment to the Seed Law was published by the Standing Committee of the National People's Congress and will go into effect on March 1, 2022. The draft amendment was released for public comment on August 20, 2021. The amendment expands intellectual property rights for new plant varieties, extends and improves the level of protection, increases enforcement and compensation for infringement, and attempts to stimulate domestic innovation. Most importantly, the amendment establishes an EDV system within China, a change which the industry has sought for many years and was taken out of the previous amendment. Please refer to [GAIN CH2021-0185](#) for more detailed information.

Seed Industry Revitalization Action Plan to be Issued

The PRC attributes growing importance to the revitalization of the domestic seed industry. President Xi Jinping presided over the twentieth meeting of the Central Committee for Comprehensive Deepening Reform on July 9, 2021, at which it reviewed and approved the Seed Industry Revitalization Action Plan (hereinafter referred to as the Action Plan). The Action Plan is considered a major milestone in the history of the development of China's seed industry. Allegedly, the Action Plan clarifies the overall goal of achieving self-reliance of the seed industry and independent and controllable seed sources and puts forward a package arrangement of the guiding ideology, basic principles, key tasks, and safeguard measures for the revitalization of the seed industry. As of December 31, 2021, the Action Plan has not been made publicly available.

¹ The exchange rate used in this report is RMB 6.39 = \$1. According to China Seed Industry Development Report by the Ministry of Agriculture and Rural Affairs, China's seed market value is around RMB 120 billion.

Biotechnology and Planting Seeds

On December 3, 2021, China notified the *Decision of the Ministry of Agriculture and Rural Affairs (MARA) to Revise the Administrative Measures for the Safety Assessment of Agricultural GMOs* (SPS N CHN 1241) to the WTO SPS committee. The notification follows a November 12 publication of the same measures for domestic comment. The revisions change the nature of biosafety assessment from being on a “crop variety and event” basis to solely on an “event” basis. The change facilitates variety registration of genetically engineered (GE) crop varieties for domestic cultivation and provides for the biosafety assessment of GE events containing “stacked” traits. Please refer to [GAIN CH0165](#) for more details of the document.

Simultaneously, MARA published its "Decision on Amending Some Seed Industry Regulations "(Draft for Comments)" which includes three seed regulations. These are the 1) Administrative Measures for Major Crops Variety Registration; 2) Administrative Measures for Crop Seed Production and Operation License; and 3) Regulations on Nomenclature of Agricultural Plants Varieties. The Decision facilitates the ability of developers of GE crop varieties to apply for seed variety registration as well as for a Production and Operation License. These publications are expected to facilitate the commercialization of domestic GE seeds and traits in China. Please refer to [GAIN CH2021-0141](#) for more details of the document.

Please refer to [CH2021-0128 Agricultural Biotechnology Annual](#) for detailed information on China’s biotechnology sector developments.

Hainan Provincial Government Import and Export Developments

On November 22, 2021, the Hainan provincial government released the "Administrative Measures for Seed Import and Export Production and Operation Licensing of Hainan Free Trade Port.” These measures apply to the application, issuance, supervision and management of seed production and operation licenses for enterprises registered in the Hainan Free Trade Port engaged in seed import and export business. According to Article 13 of the national Administrative Measures for Crop Seed Production and Operation License, the seed production and operation license for seed import and export business shall be issued by MARA. These Measures represent the PRC’s willingness to promote the development of Hainan’s seed industry and to surrender central control of the issue to the Hainan Free Trade Port.

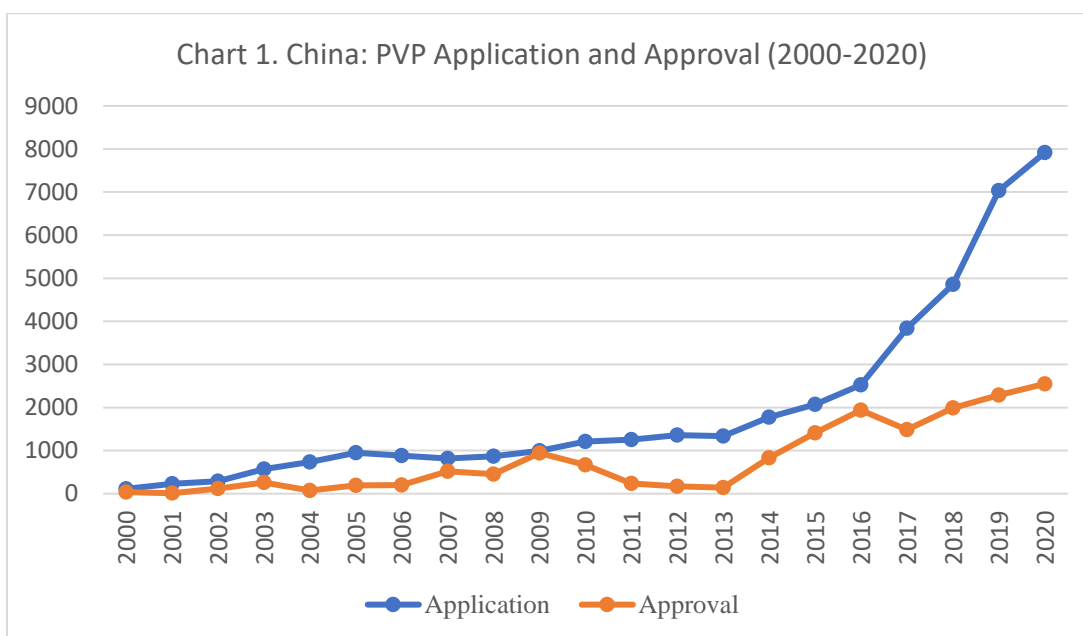
According to the Measures, producers and operators engaged in the import and export of crop seeds must submit samples to the designated provincial seed bank to be kept on file. This must be done within five days before the exported seed leaves the country or five days after the imported seed arrives in the country. The import and export of GE seeds shall abide by the Administrative Measures for the Safety Assessment of Agricultural GMOs and the Administrative Measures for the Approval of the Development of Forestry GE Projects. The import and export of illegal GE seeds is prohibited. Full text of the document is available [here](#).

China Releases Intellectual Property Rights Plan

On October 28, 2021, China's State Council released the 14th Five-Year Plan for the Protection and Application of Intellectual Property Rights. According to the plan, the country expects to see significant improvements in its IPR management capability by 2025. The Plan calls for improving plant variety protection (PVP) mechanisms through various efforts, such as establishing the EDV system, exploring the possibility to join UPOV-1991, and effectively encouraging independent innovation in the seed industry. Full text of the document in Chinese is available [here](#).

China's PVP Applications Maintain Rapid Growth

China's annual PVP application numbers have been the highest among UPOV members since 2017. In total China has received 41,716 PVP applications and granted 16,508 approvals as of January 7, 2021. In 2020, the PVP Office received 7,913 applications and granted 2,549 approvals. Data for 2021 will likely be available by the middle of 2022. The upward trend of PVP applications is an apparent proxy for the breeding industry's growth and increasing awareness of the importance of plant variety protection. While fees for PVP applications were waived in 2017, and applications spiked, they have continued to rise at much higher rates than before year after year.



(Source: MARA)

Foreign Investment Negative List

The 2021 Special Administrative Measures on Access to Foreign Investment was released on December 27, 2021. In the past several years, the negative list has relaxed some restrictions on the seed industry, however no changes for agricultural products were included in the 2021 release. For example, international seed companies remain prohibited from developing GE seeds for cultivation in China and

international seed companies are prohibited from working in select crop species and have restricted levels of ownership/investment in other crops. Please refer to [GAINCH2021-0064](#) (China's Seed Annual 2020) for more information on the changes to the 2020 negative list for seed industry. For more information on foreign investment opportunities of China's seed industry, please refer to [China Seed Association's report](#) via link below.

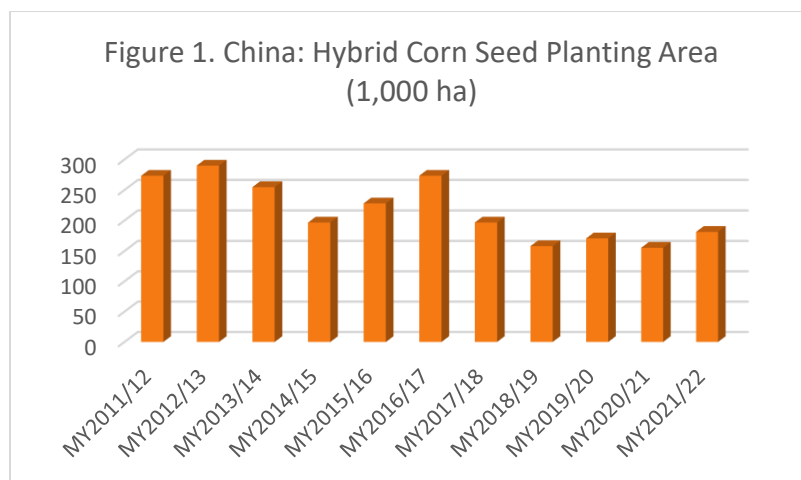
III. SEED MARKET

Note: The marketing year for all seeds of all crops runs October-September.

Corn

China's hybrid corn seed production is estimated at 993,000 metric tons (MT) in MY2021/22 (October-September), an eight percent increase from MY2020/21 as a result of expanded corn seed planting area. MARA statistics show hybrid corn seed area increased 17 percent to 181,000 ha in MY2021/22. This is considered a rebound back to normal levels in corn production area rather than an absolute increase because the area in MY2020/21 was significantly reduced (see figure 1 below). Industry believes that while areas is the highest level in four years, it still is relatively low compared to the height in planting that took place from 2011 to 2017. Among the 181,000 ha of corn seed area, 161,000 ha is for feed, 17,000 ha for silage corn, and 3,000 ha for food use (sweet waxy). The corn seed yield decreased 10-15 percent due to unfavorable weather conditions in major corn seed producing provinces of Gansu and Xinjiang, which together account for approximately 78 percent of China's total corn seed area.

China's total corn seed supply in MY2021/22 is estimated at 1.47 MMT, including 477,000 MT of carry-in stocks. MARA estimates MY2020/21 hybrid corn seed usage at 1.15 MMT, causing stocks to decrease to 320,000 MT, down 80,000 MT from the previous year, and down 630,000 MT from the height in MY2016/17. The high stock of corn seed in previous years is one of the industry's top concerns which has driven down prices for the last five years and contributed to the continuous decline corn seed planting area. That said, now that stocks have declined, corn seed production is expected to grow in the next few years.



(Source: National Agriculture Technology Extension Service Center, MARA)

Rice

Hybrid rice seed production is estimated at 267,000 MT in MY2021/22, a 60 percent increase from MY2020/21 (see figure 2 below) due to larger planting area and higher yield. MARA statistics show hybrid rice seed area increased 30 percent to 105,333 ha in MY2021/22. Among the 105,333 ha, 17,333 ha is early rice, 64,667 ha is middle rice, and 23,333 ha is late rice. According to MARA statistics, China's hybrid rice seed area decreased to 80,667 ha in MY2020/21 from the 112,667 ha in MY2018/19 due to high stocks and low prices. With the government's call to convert single-crop to double-crop rice in order to increase grain production, use of hybrid rice seed has increased. This has also contributed to this year's area expansion. The average yield of hybrid rice seed in MY2020/21 is 2,550 kg/ha, about a 22 percent increase from the previous year. However, the MY2020/21 yield is 20 percent lower than the average due to poor weather conditions.

Total hybrid rice seed supply in MY2021/22 is estimated at 351,000 MT, including 84,000 MT of carry-in stocks. MARA estimates MY2021/22 hybrid rice seed demand (domestic use and exports) at 235,000 MT, pushing stocks up to 115,000 MT, an increase of 31,000 MT from the previous year.

Conventional rice seed production is estimated at 1 MMT in MY2021/22, a 14 percent increase from MY2020/21. MARA estimates MY2021/22 conventional rice seed demand at 634,000 MT, a 15 percent decrease from MY2020/21 as the result of larger hybrid rice planting. Heilongjiang and Jiangsu are major conventional rice seed production provinces in China, together accounting for over 60 percent of total area.

Wheat

Winter wheat seed production is estimated at 4.5 MMT in MY2021/22, an eight percent decrease from MY2020/21 due to unfavorable weather conditions in major production areas, such as Hebei, Shandong, and Hubei. Winter wheat seed demand is estimated at 3.5 MMT. Spring wheat seed production is estimated at 170,000 MT in MY2021/22.

Soybean

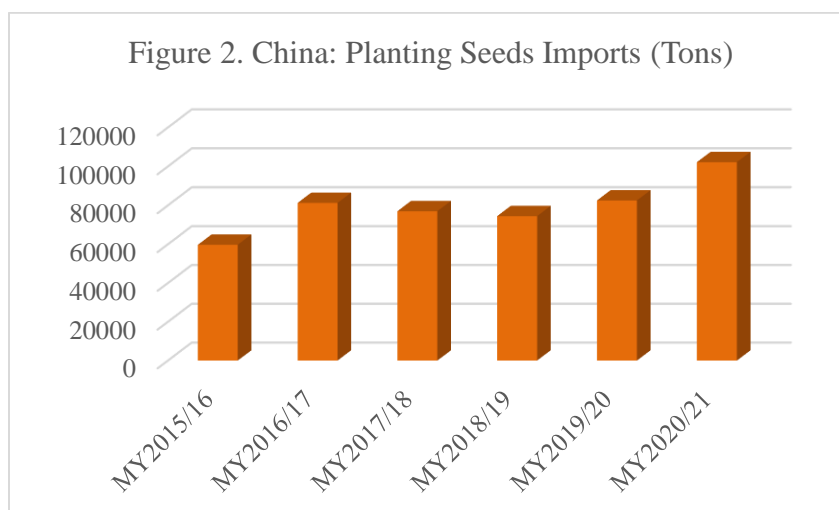
Soybean seed production is estimated at 730,000 MT in MY2021/22, with planting area at 300,667 ha, a five percent increase from MY2020/21. Soybean seed demand is estimated at 500,000 MT with stable and sufficient supplies.

Cotton

Cotton seed production is estimated at 154,000 MT in MY2021/22, similar to the previous year. Among the 154,000 MT, hybrid cotton seed production is estimated at 3,000 MT and conventional seed production is estimated at 151,000 MT. Cotton seed demand is estimated at 123,000 MT.

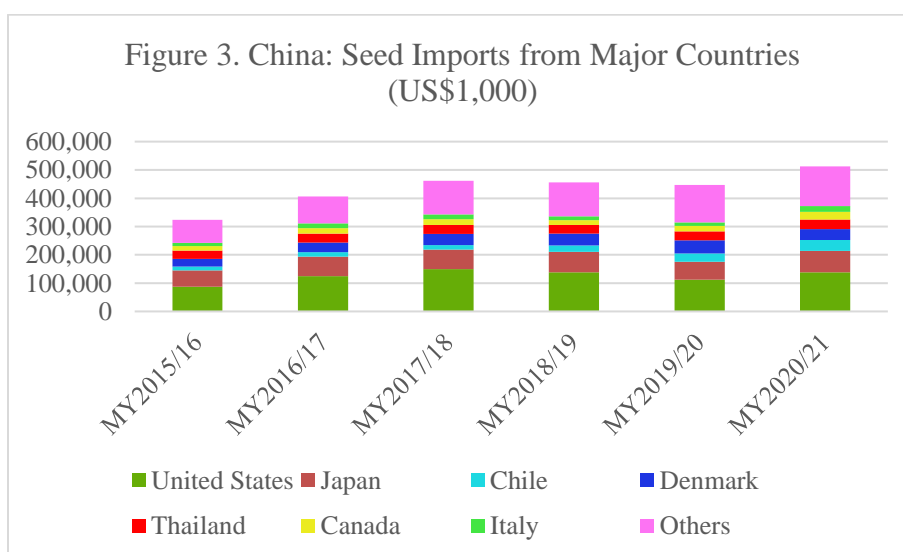
IV. TRADE

Imports



Source: China Customs

China's seed imports are forecast at 97,000 MT in MY2021/22, a five percent decrease from MY2020/21 due to smaller grass seed import forecast (see grass seed import section below). China's seed imports will likely continue to remain high to meet the diversified market demands. China's major grain seed imports (corn, wheat, rice and soybean) are small (see table 1 below), which has led the Chinese government to state publicly China does not have a seed security issue. Vegetable and grass seed are the top two imported seeds, accounting for 74 percent of both volume and value in China's MY2020/21 total seed imports. The United States continues to be the largest seed supplier to China, accounting for 27 percent by value and 53 percent by volume of China's MY2020/21 planting seeds imports.



Source: China Customs

Table 1. China: Planting Seeds Imports from the World

HS Code	Description	Value (\$1,000s)			Volume (MT)		
		10/18 - 09/19	10/19 - 09/20	10/20 - 09/21	10/18 - 09/19	10/19 - 09/20	10/20 - 09/21
	Planting Seeds	455,975	447,365	512,288	74,470	82,497	102,168
100210	Rye Seed	1	0	0	0	0	0
100410	Oat Seed	3,088	4,909	7,572	5,221	8,170	12,753
100510	Corn Seed	4,851	4,949	3,260	494	391	261
100710	Sorghum Seed	3	2	0	0	2	0
12060010	Sunflower seeds	2,630	3,233	9,637	12	26	29
120770	Melon Seeds	11,403	9,342	6,714	32	34	18
120910	Sugar Beet Seeds	29,106	21,480	23,445	1,119	744	639
120921	Alfalfa Seeds	7,194	9,691	16,628	2,613	3,479	4,511
120922	Clover Seeds	8,152	8,412	13,255	2,196	2,457	3,350
120923	Fescue Seeds	24,833	22,095	38,478	10,567	11,512	19,585
120924	Kentucky Blue Grass Seeds	26,367	10,785	20,921	5,963	2,964	6,566
120925	Rye Grass Seeds	48,599	46,483	44,641	32,015	37,083	30,727
120929	Forage Seeds	85	360	115	3	13	5
120930	Herbaceous Seeds	35,957	37,207	35,241	28	323	55
120991	Vegetable Seeds	228,273	240,444	244,154	9,542	9,020	10,581
120999	Fruit and Spores Seeds	25,433	27,973	48,225	4,665	6,279	13,087

Source: China Customs

China imposed additional retaliatory tariffs on planting seeds on September 1, 2019. However, the tariff does not apply to grass (rye, Kentucky, fescue, and clover) or vegetable seed, which combined account for 66 percent of China's total seed imports from the United States in MY2020/21. Please see Annex I for the tariff schedule on U.S. planting seeds.

Vegetable Seed Imports

China's MY2021/22 vegetable seed imports are forecast at 10,000 MT, a five percent decrease from MY2020/21. The decrease can be attributed to an unusually high increase in MY2019/20 when shipments from the previous year due to COVID-19 arrived. According to industry sources, an increasing trend is for Chinese vegetable seed companies to produce seeds overseas, particularly in

Chile, and then re-export the seed to China. Industry cites Chile’s reverse southern hemisphere seasons and climatic advantages complimentary to China’s conditions. China’s main imported vegetable seeds are tomato, broccoli, carrot, onion, and spinach.

Italy, Thailand, Indonesia, and Denmark supplied 86 percent of China’s vegetable seed imports in MY2020/21 by volume. Though Japan supplied less than two percent of the volume, it accounted for 21 percent of China’s total vegetable seed imports by value due to the high unit price. According to China Customs data, the unit price of imported vegetable seed from Japan in MY2020/21 was \$ 246,804 per ton, while the average price from the world was \$23,075 per ton.

Table 2. China: Planting Seeds Imports from the United States

HS Code	Description	Value (\$1,000s)			Volume (MT)		
		10/18-09/19	10/19-09/20	10/20 - 09/21	10/18-09/19	10/19-09/20	10/20 - 09/21
	BICO-Planting Seeds	137,743	112,045	137,819	40,328	45,156	54,519
120925	Rye Grass Seeds	31,116	28,775	20,752	20,985	26,550	17,857
120923	Fescue Seeds	21,603	18,033	34,592	9,139	9,265	17,557
120999	Fruit and Spores seeds	17,734	18,119	35,201	2,034	3,297	8,166
120924	Kentucky Blue Grass Seeds	23,955	9,590	18,306	5,344	2,598	5,556
100410	Oats Seed	920	1,469	2,124	1,579	2,470	3,736
120922	Clover Seeds	1,951	920	4,459	639	384	1,151
120991	Vegetable Seeds	20,935	17,314	13,392	541	485	429
120921	Alfalfa Seeds	293	479	303	55	89	48
120930	Herbaceous Seeds	18,911	17,147	8,356	10	12	16
12060010	Sunflower seeds	234	147	282	1	2	1
100510	Corn Seed	10	10	0	2	3	0

Source: China Customs

Grass Seed Imports

Post forecasts MY2021/22 grass seed (alfalfa, rye, fescue, clover, and Kentucky) imports at 55,000 MT, a 15 percent decrease from MY2020/21 due to lower supply from the United States. According to

industry sources, U.S. grass seed production in 2021 declined significantly due to high temperatures and severe drought conditions in major production areas. Meanwhile, sources also indicate demand for grass seed within the United States remains strong, and this resulted in a substantial reduction in grass seed available for export and significant price increases. According to industry sources, the quotes for fescue seeds in December 2021 more than doubled from the same period last year and a similar situation exists for rye grass seeds.

Generally, China's domestic demand for grass seed is expected to remain stable. According to local media reports, the State Forestry and Grass Administration is expected to release the "National Grass Seed Industry Medium and Long-term Development Plan (2021-2035)", and MARA will formulate and implement the "National Modern Forage Industry Development Plan (2021-2030)". The two documents are expected to regulate and promote China's domestic grass seed production and market. Neither document has been released as of the end of 2021.

The United States continues to be the largest seed exporter to China, accounting for 65 percent of China's total grass seed imports in MY2020/21, followed by Denmark, Canada and New Zealand, with market share at 10, 9 and 6 percent respectively.

Exports

China's seed exports are forecast at 30,000 MT in MY2021/22, stable from MY2020/21. Rice seed accounted for 73 percent of China's total seed exports in MY2020/21 by volume, although it only accounted for 32 percent by value. Meanwhile, vegetable seed accounted for 14 percent of total seed exports by volume in MY2020/21, while it accounted for 49 percent by value.

China's hybrid rice seed exports are forecast at 22,000 MT, stable from MY2020/21. Hybrid rice seed exports have basically stabilized at 21,000-22,000 MT in the past three years. Pakistan, the Philippines, and Vietnam are the largest buyers of Chinese rice seed, which combined account for 95 percent of China's total rice seed exports in MY2020/21.

China's MY 2020/21 vegetable seed exports are forecast at 4,000 MT, five percent decrease from the previous year. According to industry sources, a large amount of exported vegetable seeds is customized (Chinese producers produce vegetable seeds according to the requirements of foreign customers and then export). Major exported vegetable seeds include tomato, lettuce, vegetable beans and cabbage. Vietnam, South Korea, Netherlands, Japan, and the United States are the largest buyers of China's exported vegetable seeds, accounting for about 60 percent of China's vegetable seed exports in MY2020/21.

Table 4. China: Seed Exports to the World

HS Code	Description	Value (US\$1,000s)			Volume (ton)		
		10/18 - 09/19	10/19 - 09/20	10/20 - 09/21	10/18 - 09/19	10/19 - 09/20	10/20 - 09/21
	Planting Seeds	239,910	240,599	253,220	27,903	29,130	29,796
100191	Wheat Seed,	16	0	0	45	0	0
100510	Corn (Maize) Seed	2,697	3,224	3,864	725	806	1,001
10061021	Long rice seeds	63,596	73,034	74,462	18,142	20,524	20,151
10061029	Other rice seeds	9,974	5,512	6,306	3,054	1,695	1,941
100710	Grain Sorghum Seed	121	0	0	28	0	0
120110	Soybean Seed	465	296	372	125	79	101
120230	Peanut Seed	1	39	29	0	19	9
120721	Cotton Seeds	1	79	159	0	5	79
12077010	Melon Seeds	20,180	15,346	16,684	202	146	161
120910	Sugar Beet Seeds	0	1	0	0	0	0
120921	Alfalfa Seeds	270	221	196	93	82	52
120925	Rye Grass Seeds	9	0	0	3	0	0
120929	Forage Seeds	1,120	1,130	1,025	367	437	333
120930	Herbaceous Seeds	17,321	18,377	22,256	782	859	952
120991	Vegetable Seeds	120,189	119,380	122,884	3,803	3,803	4,252
120999	Fruit Seeds	3,951	3,958	4,983	534	625	764

Source: China Customs

ANNEX I.

Table 5. China: Schedule of Tariffs on U.S. Planting Seeds

HS Code	Product Description	MFN* Rate	Section 232 Retaliatory	Section 301 Retaliatory*	Total Applied Tariff
	Implementation Date	Jan 1, 2020	Apr 2, 2018	Feb.14, 2020	Feb.14, 2020
10021000	Rye Seed	0%	0%	5%	5%
10031000	Barley Seed	0%	0%	5%	5%
10041000	Oats Seed	0%	0%	5%	5%
10071000	Grain Sorghum Seed	0%	0%	5%	5%
10089010	Other Cereals Seed	0%	0%	5%	5%
12011000	Soya Beans for Cultivation	0%	0%	5%	5%
12023000	Ground nuts, for cultivation	0%	0%	5%	5%
12077092	Red melon seeds	20%	0%	5%	25%
12077099	Other melon seeds	30%	0%	5%	35%
12072100	Cotton seeds, for cultivation	0%	0%	5%	5%
12091000	Sugar beet seed	0%	0%	5%	5%
12092990	Other forage seeds	0%	0%	5%	5%

Source: China Customs

*Eligible for exclusion by Chinese importers who complete the process

Attachments:

No Attachments.