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Planting Seeds Annual 2014

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Report Highlights:
China's hybrid corn and rice seed production and acreage declined in 2013 and are forecast to continue to decline in 2014 as seed companies attempt to work through excess stocks. Despite decreased acreage, hybrid corn and rice production are forecast to exceed demand again in 2014, leading to record ending stocks. China's seed imports are forecast to recover in MY 2013/14 following a 23 percent decline in My 2012/13, as excess grass and sunflower stocks have been reduced.

Executive Summary: Hybrid corn and rice seed production and acreage declined in 2013 after several years of expansion as seed companies tried to work through excess stocks. Ending stocks are set to exceed annual hybrid corn seed consumption in 2013, and reach 60 percent of hybrid rice seed consumption. Despite decreased acreage, hybrid corn and rice production are forecast to exceed demand again in 2014, leading to record ending stocks. China's seed imports declined 23 percent in MY2012/13, primarily due to a large decline of grass and sunflower seed imports. Grass seed imports in MY2013/14 are forecast to recover as the majority of stocks have been reduced. China's seed exports declined 34 percent in MY 2012/13 due to a large decline in rice seed exports.

General Information:

China is the second largest seed market in the world, annually using roughly 12.5 million tons of planting seed. The Ministry of Agriculture (MOA) estimates the seed market in 2012 at RMB104 billion ($17 billion), of which 65 percent is hybrid corn, hybrid rice, vegetable, and fruit seeds. China is self-sufficient in rice, corn, wheat, cotton, and soybean seeds, and produces 80 percent of the vegetable and fruit seeds it uses. Farmers are relying less on saved seeds and are instead using government subsidy programs to purchase higher quality commercial seeds.

China's seed industry is highly fragmented and mostly dependent on public institutions for research and development. Inconsistent seed quality and minimal farmer servicing by seed companies has limited yield growth. Rising food demand and limited arable land in China have made this a pressing issue.

On January 19, 2014, China released a high-level policy document on agriculture that called for the development of the modern seed industry (see GAIN CH14013). This is expected to speed up ongoing efforts by the government to consolidate the seed industry and develop integrated companies with independent research and development capabilities (see CH13008). The Ministry of Agriculture announced that there were 5,200 seed companies as of May 2014, down from 8,700 companies in 2011. The government hopes to further reduce this number in the future.

China is currently revising its seed law as part of its effort to develop a stronger domestic seed industry. The draft law is expected to be published for public comment in fall 2014 and, if approved, enacted in 2015. The draft law will strengthen variety management and intellectual property protections for seeds. It also reportedly will increase restrictions and oversight over international seed companies as well as the transfer of germplasm internationally and within China.

Production:

Seed production in China is undergoing a cyclical contraction caused by overexpansion. Hybrid corn and rice stocks reached a record one million tons and 140,000 tons respectively in 2013, more than 50 percent higher than the year before. Over the past several years seed companies have expanded production far beyond demand in response to strong profits and in anticipation of higher future production costs. Production also benefited from several years of better than average weather. Seed producers are beginning to take steps to reduce market oversupply by reducing acreage in 2013. However, seed production continued to exceed demand in 2013, resulting in record stocks in 2014 (see table 1 below).

Table 1: China's hybrid corn and hybrid seed stocks (1,000 Metric Tons)

	2008	2009	2010	2011	2012	2013	2014*
Hybrid corn seed	610	450	430	400	650	1,000	1,300
Hybrid rice seed	82	47	47	47	75	140	155

Source: Ministry of Agriculture; 2014 based on Post estimate

Corn

2013 hybrid corn seed production is estimated at 1.41 million tons, down 10 percent year-on-year on lower acreage. Acreage fell 14 percent to 250,000 hectares in 2013 as seed producers responded to oversupply. Total supply in MY 2013/14 is estimated at 2.41 million tons, including one million tons in carry-in stocks. Industry has voiced concern that for the first time total supply is more than double the 1.1 million tons estimated demand.

Rice

2013 hybrid rice seed production is estimated at 290,000 tons, down 16 percent on lower acreage. Acreage dropped 19 percent to 104,000 Ha in response to oversupply. Combined with the 140,000 tons of carry-in stocks, total supply is expected to reach 430,000 tons during MY2013/14. MY 2013/14 Hybrid rice seed consumption is estimated at 250,000 tons.

Wheat

2013 winter wheat seed production is estimated at four million tons, down 15 percent from last year due to adverse weather in major producing regions. Acreage was stable at 800,000 Ha. Most wheat seeds are conventional varieties grown in northern China. Total demand in 2013/14 is estimated at 3.1 million tons. MOA estimated that only 56 percent of wheat seeds were bought commercially in 2012, with farm saved seeds accounting for the rest.

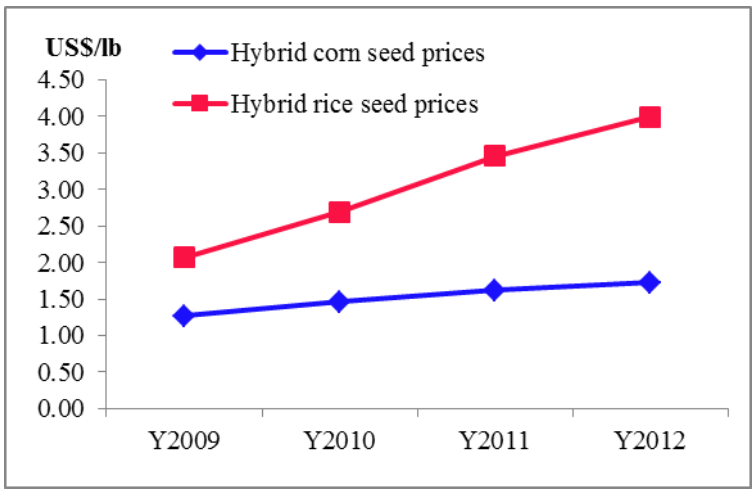
Cotton

MY 2013/14 cotton seed production is estimated at 127,500 MT, down four percent from last year on lower acreage and yields. Cotton seed acreage declined one percent in reaction to a continued decline in overall cotton acreage. MY 2013/14 cotton seed demand is estimated at 118,000 MT. Approximately 70 percent of cotton acreage is planted with genetically modified Bt cotton.

Prices

Hybrid rice prices continued their sharp upward trajectory in 2013, reaching $4.00 a pound due to higher production costs. Hybrid corn prices also increased (see figure 1 below). Seed suppliers see demand as inelastic and have avoided competing on price despite high stock levels.

Figure 1: Domestic Hybrid Corn and Rice Seed Prices



Source: Ministry of Agriculture

Imports

China imported 40,736 MT of planting seeds in MY 2012/13 valued at $ 255 million. This represented a 23 percent decrease in volume, primarily due to a large decline of grass and sunflower seed imports. Vegetable and fruit, grass (rye grass, fescue, clover, and Kentucky grass), sugar beet, and sunflower seeds were the top four import categories by value. The United States continues to be the largest seed supplier to China, and has high market share in grass, sunflower, and fruit/melon seeds. The United States' total seed market share in MY 2012/13 was 60 percent by volume and 36 percent by value.

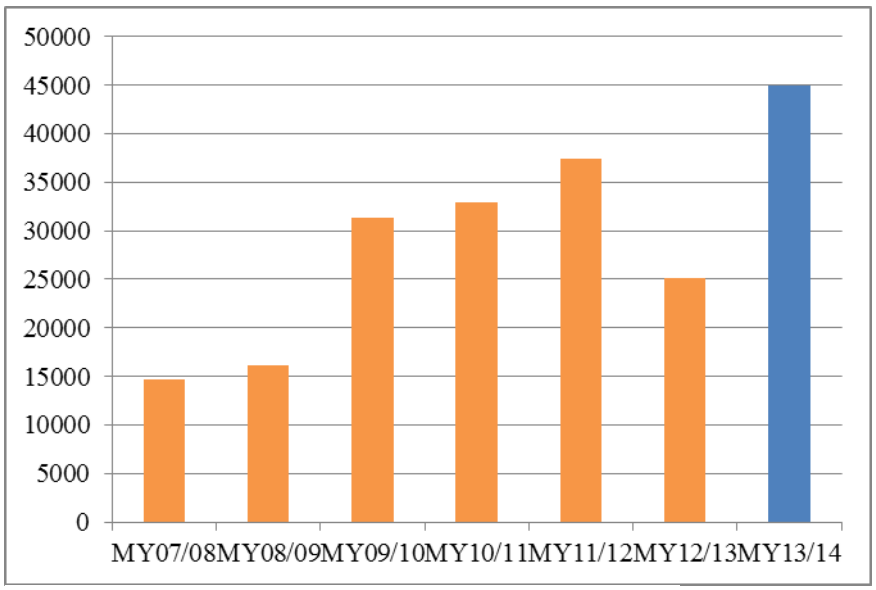
Grass seed imports to rebound

Post forecasts MY 2013/14 grass seed (rye, fescue, clover, and Kentucky) imports at 45,000 MT, an 80 percent increase over MY 2012/13, as imports are expected to rebound normal levels (see figure 2). Local traders are optimistic about MY2013/14 imports as the majority of stocks have been digested in MY2012/13 when imports were low. Demand for feed grass and landscape grass remains strong. Please refer to CH12009 for more information on China's policies supporting grassland development and protection.

Grass seed imports fell 33 percent in MY 2012/13 to 25,087 MT on large domestic stocks and high international prices. According to China Customs data, the average price of imported fescue grass seed increased 40 percent between MY2011/12 and MY2012/13.

MOA and the Ministry of Finance announced a joint support program for alfalfa production in 2012 to provide high quality feed for the dairy industry, increasing demand for alfalfa seed. The program provides an annual subsidy of 525 million for alfalfa production in 10 provinces until 2015. As a result, alfalfa seed imports increased over 330 percent over the past two years, reaching 1,741 MT in MY2012/13. The provinces receiving subsidies are: Heilongjiang, Jilin, Liaoning, Inner Mongolia, Hebei, Tianjin, Shaanxi, Gansu, Ningxia and Xinjiang.

Figure 2. China's Grass Seed Imports (in metric tons)



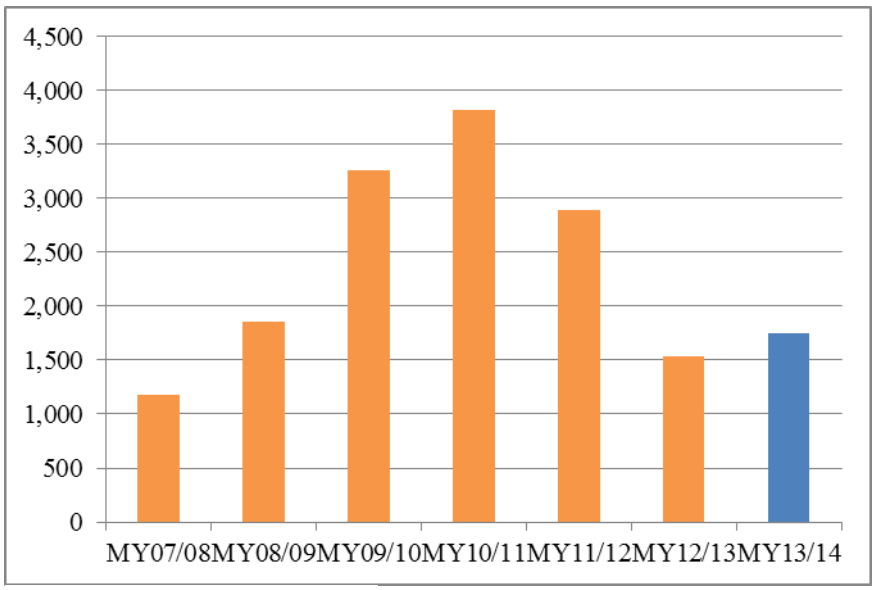
Source: Global Trade Atlas; MY13/14 is an estimate

Sunflower seed imports to maintain low volume due to plant acreage shrink

Sunflower seed imports are forecasted to increase 15 percent in MY 2013/14 to 1,750 MT after two years of rapid decline (see figure 3). The small recovery is not expected to change the overall downward trend for sunflower seed imports in China. The United States continues to be the largest supplier of sunflower seeds to China, accounting for over 97 percent of China's total imports in MY 2012/13.

Sunflower acreage declined to 888,500 ha in 2012 from 984,000 ha in 2010 as farmers shifted to other crops with higher returns, such as corn in the northeast and tomatoes in Xinjiang. Inner Mongolia, Xinjiang and Jilin account for over 70 percent of China's total sunflower acreage. In addition, some seed growers are now producing foreign sunflower varieties in China, reducing demand for imports. An increasing number of variety owners are choosing to produce seeds in China to take advantage of lower production costs despite continued concerns about intellectual property rights protection.

Figure 3. China's Sunflower Seed Imports (in metric tons)



(Source: Global Trade Atlas)

Vegetable seed imports remain high on strong domestic demand

MY 2013/14 vegetable seed imports are forecast to increase 15 percent to 8,700 MT because of strong demand. Farmers, faced with growing vegetable consumption and limited land, are looking for ways to increase yields. This in turn is generating strong demand for high quality seeds, including foreign varieties. Indonesia, Italy, Denmark and Thailand supplied two-thirds of China's vegetable seed imports in MY 2012/13.

Exports

China's seed exports declined 34 percent to 28,085 MT in MY 2012/13 driven by a 45 percent decline in rice seed exports. Rising production costs and currency appreciation have made rice seed exports less competitive. Industry contacts report that China's rice seed exports are facing strong competition from expanded multinational breeding facilities in Northeast Asia and are hampered by the government's restrictive germplasm protection policies. Despite these challenges, rice seed exports are expected to recover 12 percent in MY 2013/14 to 19,000 tons.

Policy:

Intellectual Property Rights

The seed industry is technology and research intensive, making effective IPR protection critical to the success. Weak IPR protection has been a major barrier to the development of China's seed industry. Variety violation and counterfeit seeds are common problems for both imported and domestic seeds. Industry reports that over 50 percent of seeds sold in China are counterfeit, and for some varieties the percentage climbs to 80 percent.

The structure of China's seed industry makes it difficult to protect IPR. While the number of seed companies is declining, there are still over 5,200 registered companies as of May 2014. Most of these companies have little or no research and development capacity, creating little incentive for them to focus on protecting IPR. Most seed development in China still occurs in public research facilities. The

government is working to address these challenges by strengthening IPR legal protections, reducing the number of seed companies, and promoting private sector seed development. Please refer to GAIN CH14015 for more information on agricultural IPR in China.

Variety Registration

On December 27, 2013, MOA released the revised Administrative Measures for Major Crops Variety Registration. The revisions added new requirements for applying for variety registration, including the length and location of testing. DUS testing is now required in addition to regional and production testing and the number of testing locations is increased. The new measure also establishes rules for withdrawing varieties from the market that fail to perform as promised. See Annex I for an unofficial translation of the measure.

The new measure established a "green channel" to streamline the cumbersome variety registration process under two scenarios. First, integrated enterprises with registered capital over RMB100 million will be allowed to conduct their own regional testing and production testing for self-owned varieties when applying for national registration. Second, seed varieties that have received provincial approval and have two or more years of testing data from a set number of locations do not need to repeat regional and production testing when applying for national approval. Foreign companies are unlikely to benefit from the first scenario as most do not have breeding centers in China due to IPR protection concerns.

On May 29, 2014, the National Crop Variety Registration Committee announced the Testing Guideline for Rice and Corn National Variety Registration Green Channel (Trial Version). The guideline instructs applicants to submit variety registration green channel testing plans by December 15. Applicants will be notified by January 15 if their testing plan has been approved. The document provides detailed requirements for variety testing. See Appendix II for an unofficial translation of the guideline.

Plant Variety Protection (PVP) Applications and Approvals

As of the end of 2013, China's PVP Office had accepted 11,710 PVP applications and approved 4,018. The approval process generally takes 3-5 years, but can take longer. Two thirds of the applications were for rice and corn (see table 4 below). Domestic agricultural research institutes and universities accounted for slightly over half of the applications (see table 5 below).

Foreign companies have begun to take a greater interest in submitting PVP applications in China in recent years. The Netherlands is the largest foreign PVP applicant, having applied for 290 new plant varieties in China (250 of which are for flowers). The United States is the second largest foreign application with 220 PVP applications, 183 of which are for corn varieties.

Table 4. PVP Applications and Approvals

Plant	Applications				Approvals
	2011	2012	2013	Grand Total	Grand Total

Rice	386	418	360	3,448	1,323
Corn	326	399	419	3,819	1,549
Wheat	118	94	84	967	372
Cotton	48	39	60	428	125
Soybean	47	61	37	460	142
Other major crops	73	82	119	689	181
Vegetable	97	95	74	658	152
Flower	128	105	117	834	106
Fruit	28	63	47	353	68
Others (pasture and tea)	4	5	16	54	0
Total	1,255	1,316	1,333	11,710	4,018

(Source: MOA PVP Office)

Table 5. PVP Applicants

Applicant	Applications				Approvals
	2011	2012	2013	Grand Total	Grand Total
Chinese research institutes	497	485	494	5,151	2,113
Chinese enterprises	530	584	618	4,253	1,313
Chinese universities/colleges	98	116	65	882	325
Chinese individuals	68	73	52	663	175
Foreign enterprises	57	89	98	681	89
Foreign individuals	2	4	2	40	1
Foreign universities/colleges	2	2	1	22	2
Foreign research institutes	1	8	3	18	0
Total	1,255	1,361	1,333	11,710	4,018

(Source: MOA PVP Office)

Tariff-rate Quotas

China's tariff-rate quotas (TRQs) and VAT free seed import policies are still in effect and have not changed. Please refer to CH12009 for more information on these policies.

Biotechnology Trade and Production:

There has been no progress in the commercialization of genetically modified corn and rice varieties. MOA granted biosafety certificates to two insect resistant rice varieties and a high phytase corn variety in November 2009, but these biosafety certificates are set to expire on August 17, 2014 and may not be renewed. Policy makers have cited public opposition as a reason for not commercializing genetically modified grain varieties. Industry sources have also identified government concern over the ability of domestic seed companies to compete with international seed companies in the area of biotechnology as a reason for the delay. Please refer to CH13033 for more information on biotechnology policies in China.

Production, Supply and Demand Data Statistics:

Table 1. China's Imports from the World in Volume & Value

	MY(Jul-Jun)	Volume (MT)			Value (Thousand US$)		
HS Code	Planting Seeds	MY10/11	MY11/12	MY12/13	MY10/11	MY11/12	MY12/13
	Total	50,993	53,131	40,736	250,873	276,471	254,909
10019010	Wheat	0			0	0	0
10020010	Rye	0			0	0	0
10030010	Barley	0			0	0	0
10040010	Oats	0			0	0	0
100510	Corn	257	387	384	4,447	5,430	5,430
10061011	Rice,long grain	0			0	0	0
10061019	Rice, other	0	0	0	0	4	4
10070010	Sorghum	0	0	0	3	0	0
10089010	Other cereals	0			0	0	0
12010010	Soybean seeds	0	0	0	3	0	0
12051010	Rape/Colza, low erucic acid	0			0	0	0
12060010	Sunflower	3,824	2,897	1,533	48,163	37,010	16,666
12072010	Cotton	2	0	0	6	0	0
12091000	Sugar beet	978	950	815	12,034	15,448	18,657
120921	Alfalfa	402	1,258	1,741	1,360	6,002	8,876
120922	Clover	1,595	2,024	1,798	5,082	7,810	7,475
120923	Fescue	12,538	16,805	6,957	12,186	23,413	13,606
120924	Kentucky	5,361	6,841	3,498	14,807	20,554	11,767
120925	Rye grass	13,481	11,700	12,835	12,269	14,196	17,976
120930	Herbaceous	48	83	9	7,753	13,065	14,529
12092990	Other Forage	3	52	52	35	307	307
120999	Fruit, Melon and Other	4,432	3,342	3,566	18,541	19,790	21,402
120991	Vegetable	8,072	6,792	7,548	114,184	113,442	118,214

Source: Global Trade Atlas

Table 2. China's Imports from the U.S. in Volume & Value

	MY(Jul-Jun)	Volume (MT)			Value (Thousand US$)		
HS Code	Planting seeds	MY10/11	MY11/12	MY12/13	MY10/11	MY11/12	MY12/13
	Total	34,335	37,582	24,442	111,183	126,607	92,772
10019010	Wheat	0	0	0	0	0	0
10020010	Rye	0	0	0	0	0	0
10030010	Barley	0	0	0	0	0	0
10040010	Oats	0	0	0	0	0	0
100510	Corn	0	0	0	0	0	0
10061011	Rice, long grain	0	0	0	0	0	0

10061019	Rice, other	0	0	0	0	0	0
10070010	Sorghum	0	0	0	0	0	0
10089010	Other cereals	0	0	0	0	0	0
12010010	Soybean	0	0	0	0	0	0
12021010	Peanut	0	0	0	0	0	0
12051010	Rape/Colza, low erucic acid	0	0	0	0	0	0
12059010	Rape/Colza, nes	0	0	0	0	0	0
12060010	Sunflower	3,463	2,667	1,496	43,746	32,690	15,921
12072010	Cotton	0	0	0	0	0	0
12091000	Other sugar beet	0	0	0	0	0	0
120921	Alfalfa	109	280	666	424	1,389	3,641
120922	Clover	598	758	182	1,870	2,879	802
120923	Fescue	11,568	15,746	6,231	11,085	22,089	12,226
120924	Kentucky	5,208	6,685	2,998	14,499	20,246	10,655
120925	Rye grass	10,818	9,338	10,044	9,090	10,568	12,604
120930	Herbaceous	6	78	3	2,531	6,061	7,685
120999	Fruit, Melon & Other	2,272	1,738	2,298	11,406	13,088	15,894
120991	Vegetable	292	292	524	16,532	17,597	1,3344

Table 3. China's Major Seed Imports and Major Countries of Origins

Clover Imports Volume and Major Origins (in MT) 120922			
Country	MY10/11	MY11/12	MY12/13
Argentina	194	208	512
New Zealand	20	277	389
Australia	269	276	299
Denmark	375	297	215
Canada	139	210	202
United States	598	758	182
Total	1,595	2,024	1,798
Fescue Seeds Imports Volume and Major Origins (in MT) 120923			
Country	MY10/11	MY11/12	MY12/13
United States	11,568	15,746	6,231
Denmark	444	291	540
Canada	524	768	186
Others	2	0	0
Total	12,538	16,805	6,957
Kentucky Seeds Import Volume and Major Origins (in MT) 120924			
Country	MY10/11	MY11/12	MY12/13

United States	5208	6685	2,998
Denmark	128	91	384
Canada	25	65	116
Total	5,361	6,841	3,498

Rye Grass Imports Volume and Major Origins (in MT) 120925			
Country	MY10/11	MY11/12	MY12/13
United States	10,818	9,338	10,044
Canada	1658	2,125	1,771
Denmark	841	203	737
New Zealand	142	12	218
Australia	0	23	45
Germany	22	0	21
Total	13,481	11,700	12,835

Sunflower Planting Seed Imports Volume and Major Origins (in MT) 12060010			
Country	MY10/11	MY11/12	MY12/13
United States	3,463	2,667	1,496
Argentina	111	15	19
France	13	10	10
Chile	169	204	4
Australia	62	1	3
Others	5	0	0
Total	3,824	2,897	1,533

Fruit, Melon and Other Import Volume and Major Origins (in MT) 120999			
Country	MY10/11	MY11/12	MY12/13
United States	2272	1738	2298
Denmark	526	89	383
Canada	585	799	312
Argentina	425	374	175
Australia	265	101	159
Taiwan	189	165	91
Others	167	75	147
Total	3,921	4,432	3,342

Vegetable Import Volume and Major Origins (in MT) 120991			
Country	MY10/11	MY11/12	MY12/13
Indonesia	1603	1124	2506
Italy	1477	1732	1064
Denmark	749	614	791
Thailand	1514	1187	719
Vietnam	242	182	570

United States	292	292	524
Japan	461	398	454
Belgium	0	163	327
Australia	218	297	222
Others	1,516	803	3,71
Total	8072	6,792	7,548

Source: Global Trade Atlas

Table 4. China's Seed Exports to the World in Volume & Value

	MY(Jul-Jun)	Volume(MT)			Value(Thousand US$)		
HS Code	Planting Seeds	MY10/11	MY11/12	MY12/13	MY10/11	MY11/12	MY12/13
	Total	33,124	42,835	28,085	186,827	276,838	246,655
10019010	Wheat	5	0	0	0	0	0
10020010	Rye	0	0	0	0	0	0
10030010	Barley	0	0	0	0	0	0
10040010	Oats	0	0	0	0	0	0
100510	Corn Seed	161	255	53	498	512	148
10061011	Rice Long Grain	21,384	30,671	16,863	54,144	94,812	53,767
10061019	Rice Other	2,625	160	142	6,607	594	262
10070010	Sorghum	6	0	0	89	0	0
10089010	Other Cereals	0	1	0	0	1	0
12010010	Soybeans	61	35	0	204	131	0
12051010	Rape/Colza, low erucic acid	0	9	6	0	27	13
12059010	Rape/Colza, nes	0	292	107	1	482	169
12060010	Sunflower Planting	297	1,399	1,184	1,154	6,440	4,955
12072010	Cotton Planting	329	91	0	1,583	453	0
120921	Alfalfa	1,390	972	228	5,051	4,304	601
120922	Clover	0	0	0	1	0	1
120923	Fescue	0	6	8	3	3	13
120924	Kentucky	9	0	64	58	0	404
120925	Rye Grass	4	47	5	10	78	6
120930	Herbaceous	972	813	653	13,308	18,318	13,775
12091000	Sugar Beet	1	2	7	14	37	48
12092910	Other Sugar Beet	11	8	13	41	51	69
12092990	Other Forage	759	2,319	493	2,814	5,524	1,037
120991	Vegetable	3,600	4,668	7,548	78,856	124,685	164,626
120999	Fruit, Melon and Other	1,510	1,087	889	22,391	20,386	6,761

Source: Global Trade Atlas

Table 5. China's Major Seed Exports and Major Countries of Origins

Rice, Long Grain Exports Volume and Major Destinations (in MT) 10061011			
Country	MY08/09	MY09/10	MY11/12
Vietnam	8590	11145	9425
Pakistan	5775	8744	3978
Philippines	1172	1649	1725
Bangladesh	3396	2825	1518
Indonesia	2413	6092	35
Others	39	216	182
Total	21384	30671	16863
Vegetable Seed Exports in Volume and Major Destinations (in MT)120991			
Country	MY08/09	MY09/10	MY11/12
Spain	10	165	2546
Korea South	434	888	891
Netherlands	678	750	838
United States	536	719	716
Italy	173	296	448
Japan	401	406	444
Taiwan	196	174	267
France	144	176	172
Hong Kong	139	169	162
Thailand	139	122	135
Bangladesh	45	88	107
Vietnam	227	153	100
Others	475	562	544
Total	3600	4668	7370
Fruit/melon Seed Exports in Volume and Major Destinations (in MT)120999			
Country	MY08/09	MY09/10	MY11/12
Korea South	733	379	423
Japan	306	354	314
United States	67	51	26
Others	401	306	127
Total	1510	1087	889

Source: Global Trade Atlas

Appendix I

Administrative Measures for Major Crops Variety Registration

Chapter I - General Provisions

Article 1. The Measure is formulated based on the "Seed Law of the People's Republic of China (hereinafter referred to as the "Seed Law") to scientifically, impartially, and timely approve major crop varieties.

Article 2. The Measure applies to the major crop variety registrations in China.

Article 3. The term "major crops" used in the Measure refers to rice, wheat, corn, cotton, soybean, rape, potato and other 1-2 crops determined by provincial agricultural administrative departments.

Chapter II - Variety Registration Committee

Article 4. Established by the Ministry of Agriculture, the National Variety Registration Committee is responsible for national crop variety registrations. Established by provincial agricultural administrative departments, the Provincial Variety Registration Committees are responsible for provincial crop variety registrations.

Article 5. Variety Registration Committee consists of professionals specialized in research, teaching, producing, marketing, management, and application, etc. The members should have senior professional titles or positions at division director level and above, generally below 55 years of age, for a term of five years.

Variety Registration Committee is supposed to have one Director and 2-5 Deputy Directors.

Article 6. Variety Registration Committee establishes an office, which is responsible for daily work of the Variety Registration Committee. The office is supposed to have one Director and 1-2 Deputy Directors.

Article 7. Special Committees by different crops shall be established under Variety Registration Committee. The Special Committee consists of 11-23 members with one Director and 1-2 Deputy Directors.

Article 8. Variety Registration Committee shall set up Director Committee, consisting of the Director and Deputy Directors of Variety Registration Committee, Directors of each Special Committees and the Director of the office.

Chapter III - Application and Acceptance

Article 9. The agents and individuals (hereinafter refers as the applicants), who apply for variety registration, can apply directly to National Variety Registration Committee or Provincial Variety Registration Committees.

Foreigners, foreign enterprises or other organizations with no habitual residence or place of business in China that want to apply for Variety Registrations in China should entrust a seed research institute, producer, or trader possessing legal person status as their agent.

Article 10. Rice, wheat, corn, cotton, soybean, rape and potato are subject to national or provincial variety registration. The applicants may apply for national and/or provincial registration, or apply to several provinces (autonomous regions and municipalities directly under the Central Government) for variety registration.

The major crop varieties determined by the provincial agricultural administrative departments apply to provincial approval.

Article 11. The varieties applying for registration should meet the following requirements:

(1) Artificially bred/discovered and improved;
(2) Distinct from existing varieties (registered varieties or varieties whose application have been accepted by the peer Crop Variety Registration Committee);
(3) Stable genetic traits;
(4) Consistent morphological and biological characteristics;
(5) A name complying with "Rules on Naming Agricultural Plant Varieties";
(6) A two-years and multi-locations variety comparison trials shall be completed in the same type of ecological zones. For rice, wheat and corn varieties applying for national variety registration, it requires no less than 20 testing sites per year for comparison trials; for cotton, soybean, rape, potato varieties applying for national variety registrations, it requires no less than 10 testing sites per year for comparison trials, or more than two provincial testing reports. For rice, wheat and corn varieties applying for provincial variety registrations, it requires no less than 10 testing sites per year for comparison trials; for cotton, soybean, rape, potato and the provincially-determined major crop varieties applying for provincial variety registrations, it requires no less than 5 testing sites per year for comparison trials.

All applications from the applicant would be rejected in three years if the applicant engages in any deception, bribery or other improper behavior during the application process. Where a crime is constituted, criminal liability will be investigated.

Article 12. Applicants applying for variety registration shall submit the following documents to the office of Variety Registration Committee:

1) Application Form. The Application Form includes crop species and variety name (with a written guarantee that the applied variety name is consistent with the name used for New Plant Variety Right and Safety Assessment of Agricultural Genetically-Modified Organisms); applicant name, address, post code, contact, phone number, fax, nationality; agents or individuals responsible for variety breeding (hereinafter referred to as "breeders");

2) Variety Breeding Report. The report includes the combination of parent lines and the parental relationship of the hybrids, breeding method, characterization of generations; the trait characterization of varieties (including the parent lines of hybrids), standard images, proposed testing area and key points of cultivation; main defects of the variety and the problems that should be paid attention to;

3) Variety Comparison Trial Report. The report includes test purpose, test varieties, test design, implementation agent, resistance identification, quality analysis, yield result, as well as the data of each test site and summarized result;

4) Letter of Commitment for the Authenticity of Variety and Application Material;

5) Test Report of GMO Detection.

6) GM cotton variety shall also provide Agricultural Genetic Modification Biology Safety Certificate.

Article 13. Within 60 days after receiving the application, the office of Variety Registration Committee shall make the decision to accept the application or not, and inform the applicants.

For those applications compliant with Article 11 and 12 of this Measure, the applications should be accepted and the applicants should be informed to provide test seeds within 30 days. The office shall arrange variety testing for those who provide test seeds; while the application shall be deemed as withdrawn for those who fail to provide test seeds in time.

For those applications not in compliance with Article 11 or 12 of this Measure, the applications should be rejected. Within 60 days after receiving the notice, the applicants may present their opinions or do amendment; while the application shall be deemed as withdraw for those who fail to reply in time. The applications shall be rejected if they are still not compliant with related articles after amendment.

Article 14. The office of Variety Registration Committee should reserve the reference sample from the test seeds provided by applicants, and submit to MOA-assigned institute for storage.

Chapter IV – Variety Trials

Article 15. Variety trials include:

1. regional testing;
2. production testing;
3. tests for distinctness, uniformity and stability (DUS) testing (hereafter refer to as DUS testing).

The varieties can be exempted from regional testing and production testing when applying national approval if they passed provincial approval and got two years testing data at over 10 production testing locations in the same type of ecological zones of neighboring province, Autonomous regions, and municipality directly under the Central Government.

The specific measures shall be developed and released by Variety Registration Committee.

Article 16. Regional testing and production testing at national level shall be implemented by National Agricultural Technology Extension and Service Center; regional test and production test at provincial level shall be implemented by provincial seed management organization. DUS testing shall be conducted by MOA New Plant Variety Test Center.

Article 17. Regional testing is supposed to indentify the variety agronomic traits such as yield ability, yield stability, stress tolerance and quality, as well as DNA fingerprint testing and GMO detection.

The regional testing of each variety must be no less than two production cycles, with no less than 3 test replicates; the test sites in the same ecological zone must be no less than 10 for national level and no less than 5 sites for provincial level.

Article 18. Synchronization of DUS testing and regional testing follows related crop test guideline.

Article 19. The production testing should be implemented in the same ecological zone after the regional test. The production test is supposed to further validate the yield ability, yield stability and stress tolerance of each variety following the local production practice under the condition close to field production.

For each variety, the production testing sites should be no less than the sites for the regional test. The planting area for each test site should be no less than 300 m^2, no more than 3000 m^2; and the test time should be no less than one production cycle.

Article 20. The check variety for regional testing and production testing should be the representative registered variety with same producing period in the same ecological zone. The check variety shall be proposed by the testing implementation institution and approved by Special Committee of Variety Registration Committee. The check variety shall be changed timely based on the agriculture development requirements.

The check variety for provincial regional test and production test shall be reported by provincial Crop Variety Registration Committee to national Crop Variety Registration Committee for the record.

Article 21. The unit undertaking regional test or production test should have independent legal personality with the corresponding test sites, equipment, and technical personnel.

The technician for variety trials should have relevant professional college education or professional titles of intermediate or above, with more than three years work experience in variety trials and regularly receiving related technical training.

The testing institutions assigned by Variety Registration Committee shall be responsible for stress resistance identification, quality analysis, DNA fingerprint test and GMO detection.

Article 22. Along with the office of Variety Registration Committee, the specific implementation institution should regularly organize the investigation of variety trials to examine the trial quality, evaluate the variety performance, and formulate investigation report.

Article 23. The specific implementation institution should hold a wrap-up meeting within 60 days after each production cycle. According to the test summary and investigation result, the Special Committee of Variety Registration Committee decides either to terminate the trial or to continue for registration submission. The office of Variety Registration Committee shall inform applicants the final decision of the variety application.

Article 24. The seed enterprises with integrated breeding, production and marketing business and

registered capital over RMB100 million may implement the regional testing and production testing of own crop varieties when applying for national approval. The testing plan shall be reported to the Office of National Crop Variety Registration Committee and confirmed by the Office 60 days prior to sowing. Testing conditions and standards shall be no lower than national level regional testing and production testing, and shall accept variety testing investigation regulated by Article 22 of this Measure. The specific measures shall be developed by the National Crop Variety Registration Committee.

Chapter V – Registration and Announcement

Article 25. For the variety completing the procedure of DUS testing, regional testing and production testing, the data of each test site and summary result should be submitted to the office of Variety Registration Committee by the specific implementation institution of variety trial within 60 days.

For the varieties regulated by the Article 15 of this Measure applying for national approvals, breeders shall submit papers to the Office of National Crop Variety Registration Committee, including Provincial Approval Certificate, copy of Registration Announcement, breeder's voluntarily production testing summary report, and DUS testing report.

The office of Variety Registration Committee shall submit to Special Committee of Variety Registration Committee within 30 days for preliminary examination. The Special Committee should complete the preliminary examination within 60 days.

Article 26. During the preliminary examination, each Special Committee should convene a plenary meeting. The meeting is considered as valid if more than **2/3** of the total members attend the meeting. According to registration criterion, the variety preliminary examination applies with secret ballot. The variety is considered as passed if approval votes achieve **1/2** and above of the total number of members.

Article 27. Implementation of a recusal system. The office of Variety Registration Committee decides whether the director of Special Committee needs to be recused; a Special Committee decides the recusal of other members.

Article 28. For the variety that passes the preliminary examination, the review comments of preliminary examination as well as the data of each site and summary result shall be published by the office of Variety Registration Committee on the official website for exposure. The public exposure duration should be more than 60 days.

Article 29. After public exposure, the review comments of preliminary examination as well as exposure result should be submitted by the office of Variety Registration Committee to the Director Committee of Variety Registration Committee for examination. The Director Committee should complete the examination within 30 days. The variety gets the approval if it passes the examination.

Article 30. For the variety with approval, the Variety Registration Committee shall designate an identifier, issue the certificate, and the peer agricultural administrative department shall publish the notice.

For the varieties with provincial approval, the provincial agricultural administrative departments should submit the information such as variety name to MOA for public exposure before the public notice.

Article 31. The registration number consists of abbreviation of approval committee, abbreviation of crop species, the year and series number, wherein the series number is three digits.

Article 32. The public notice includes: registration number, variety name, applicants, breeders, variety history, morphological characteristic, growth stage, yield, quality, resistance to stress, key points of cultivation techniques, suitable planting area and notes.

The provincial Variety Registration Committee should report to the National Crop Variety Registration Committee for the record within 30 days of public notice.

The published variety name in the public notice should be the common name of the variety, which is not allowed with unauthorized alterations during the process of production, operation and marketing.

Article 33. The registration certificate includes registration number, variety name, applicants, breeder, variety history, registration comments, public notice number and certificate number.

Article 34. For the variety that fails to pass the registration, the office of Variety Registration Committee shall inform the applicant within 30 days. The applicant may apply to the same Variety Registration Committee for re-examination within 30 days of receipt of the notification date. Variety Registration Committee should review the re-examination reason, previous registration document and previous registration procedure during the following registration meeting. Variety Registration Committee may arrange another production cycle of variety trial if necessary.

The Office of Variety Registration Committee shall inform the applicant of the review result within 30 days of re-examination in written.

Article 35. The variety registration standard of rice, wheat, corn, cotton, soybean, rape and potato shall be established by National Crop Variety Registration Committee. The variety registration standard of major crops determined by provincial agricultural administrative department shall be established by provincial Crop Variety Registration Committee and reported to National Crop Variety Registration Committee for the record.

The development of variety registration standard shall solicit public opinion.

Chapter VI – Variety Withdrawal

Article 36. The varieties that have passed registration should exit the market if the following situation occurs during production:

(1) Serious flaws found in the application;
(2) Severe degradation of variety characters;
(3) Failure to provide variety standard sample as requested.

Article 37. For the variety that is proposed to withdraw, the office of Variety Registration Committee shall make the proposal after soliciting opinion of the breeder or variety owner in writing. After preliminary examination by Special Committee, the result shall be published on the official website of the peer agricultural administrative department. The exposure duration should be more than 60 days.

After public exposure, the review comments and exposure results should be submitted by the office of

Variety Registration Committee to the Director Committee of Variety Registration Committee for review. The Director Committee should finish the review within 30 days. After obtaining permission, the variety shall be announced to exit the market by the peer agricultural administrative department.

Article 38. For the variety announced to withdraw the production should be stopped from the publish date of announcement, and the operation and marketing should be stopped within one production cycle from the publish date of announcement. Variety Registration Committee may decide to stop operation and marketing from the publish date of announcement if necessary.

The provincial Crop Variety Registration Committee should report to the National Variety Registration Committee for the record within 30 days after publishing the announcement.

Chapter VII – Supervision and Administration

Article 39. The personnel related to variety trial and administrative management shall undertake the obligation of confidentiality of business secret obtained from the procedure of testing and registration, and shall not provide the seeds applying for variety registration or seek illegal interests.

Article 40. The commitment institution practicing fraud should have its qualification conducting for variety trials cancelled, and shall be investigated for the administrative responsibility of the units or individuals who are responsible, or be held criminally responsible if it constitutes a crime.

Article 41. The personnel of test trial and registration administration who practice fraud, favoritism, abuse of authority, or dereliction of duty shall be given administrative sanctions; or be held criminally responsible if it constitutes a crime.

Chapter VIII – Supplementary Provisions

Article 42. The major crop variety that passes provincial registration may be introduced to the same appropriate ecological zones of neighboring provinces, autonomous regions, municipalities directly under the Central People's Government after getting the permission of respective agriculture and forestry administrative departments. However, firstly, the introduction test should be carried out in accordance with the "Agricultural Technology Promotion Act - People's Republic of China" to demonstrate that their applicability.

Article 43. The work funding and variety test funding required by crop variety registration shall be included in the special fiscal budget of the peer agricultural administrative department, and not collected from applicants.

Article 44. The variety test of silkworm variety registration is with reference to the implementation of this measure.

GM Crop Variety (except for GM cotton) Registration Measures shall be developed separately.

Article 45. This measure would be effective from February 1, 2014. At the same time the "the Administrative Measure of Major Crop Variety Registration" issued by MOA Decree No. 44 on February 26, 2001 and revised by MOA Decree No. 6 on November 8, 2007 should be abolished.

Appendix II

The Guideline on Green Channel Testing for National Variety Registration of Rice and Corn
(Trial Version)

Chapter I General Provisions

Article 1. This Guideline was formulated in accordance with Article 15 and Article 24 of Variety Registration Measures of Main Crops (Decree No. 4, 2013 of the Ministry of Agriculture of the People's Republic of China) (referred to as Variety Registration Measures hereinafter).

Article 2. This Guideline shall apply to regional testing and production testing conducted by applicants themselves in accordance with regulations, when applicants apply for national variety registration of hybrid rice and hybrid corn.

Article 3. Green channel testing for variety registration includes the following two cases:

Seed enterprises (hereinafter referred to as applicants) that both select and breed seeds and produce seeds, whose registered capital is no less than RMB100 million and that can meet the requirements stipulated by Article 16 in Regulations on Licensing of Seed Production and Sales (Decree No. 3, 2011 of the Ministry of Agriculture of the People's Republic of China) are permitted to conduct regional testing and production testing for their self-owned varieties by themselves.

For varieties that have gained the provincial registration and have testing data for two consecutive years in over ten production testing sites of one ecological type in neighboring provinces, autonomous regions and municipalities, they are exempt from regional testing and production testing when applying for national variety registration.

Article 4. Undertaking units for regional testing and production testing shall be qualified as an independent legal person and have suitable sites, equipment and technical personnel for these testing.

Article 5. Variety testing technicians shall have a technical college degree or above on a relevant major or an intermediate professional title or above, have over three-year relevant work experience and have relevant technical trainings regularly.

Chapter II Plan Confirmation

Article 6. Applicants form an implementation plan of the green channel testing for variety registration, including testing purpose, testing variety (control variety included) and breeders, testing design, group design and ecological layout of testing site, undertaking unit and responsible person, cultivation and management method, observation record, resistance identification, quality analysis, GMO testing, DNA fingerprint detection, DUS testing, testing summary, referring to the current implementation plan of national variety registration of rice and corn. Applicants can adjust their testing plan to production needs and shall present reasons for adjustment to the Office of National Crop Variety Registration Committee.

Implementation plan form and research record form for the national variety testing for rice and corn can be downloaded from the website of Variety Management, the sub-website of the National Agricultural Technology Extension Service Center.

Article 7. The implementation plan of the green channel testing for variety registration shall be submitted by applicants before December 15 every year to the Office of National Crop Variety Registration Committee, then will go through primary review conducted by the National Agricultural Technology Extension Service Center, and will be confirmed by experts who are assigned by the Office of National Crop Variety Registration Committee. A written approval or disapproval notice will be sent to applicants before the January 15th in the following year.

In cases of approval, applicants shall carry out testing in accordance with the implementation plan.

In cases of disapproval, applicants have the right to state their explanations to defend their plan or to amend the implementation plan within 15 days after receiving the notice. If no explanation statements or no amendments are made within this time period, the right will expire automatically.

Chapter III Variety Testing

Article 8. When regional testing and production testing are conducted by applicants themselves, regional testing shall last no less than two production cycles and each group in regional testing shall have no less than five varieties (including comparison variety, and the same hereafter) and no more than 15 varieties; after the completion of regional testing, production testing lasting no less than one production cycle shall be conducted and each group shall have no more than 5 varieties.

Resistance identification is performed by the testing agency designated by the National Crop Variety Registration Committee, and quality testing, DNA fingerprinting detection and GMO testing are performed by the qualified testing agency.

Requirements on testing group, the ecological layout of testing site and their numbers comply with those in the implementation plan of national variety testing for rice and corn, and adjustments will be made by the National Crop Variety Registration Committee when necessary.

Article 9. Requirements on testing group, the ecological layout of testing site and their number for hybrid rice varieties whose testing are conducted by applicants:

South China early indica group (Guangdong, Guangxi, Hainan and Fujian);

Group of early indica of early and middle maturity in the middle and lower reaches of Yangtze River (Zhejiang, Anhui, Jiangxi, Hubei and Hunan);

Group of early indica of late maturity in the middle and lower reaches of Yangtze River (Zhejiang, Fujian, Jiangxi, Hunan and Guangxi);

Group of middle indica of late maturity in the upper reaches of the Yangtze River (Chongqing, Sichuan, Guizhou, Yunnan and Shaanxi);

Group of middle indica of late maturity in the middle and lower reaches of Yangtze River (Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Henan, Hubei and Hunan);

Group of late indica of late maturity in the middle and lower reaches of Yangtze River (Zhejiang, Anhui, Jiangxi, Hubei and Hunan);

Group of late indica of middle and late maturity in the middle and lower reaches of Yangtze River (Zhejiang, Fujian, Jiangxi, Hunan and Guangxi);

Huang-Huai japonica rice group (Jiangsu, Anhui, Shandong and Henan);

Early and middle japonica rice of middle maturity (Inner Mongolia, Liaoning, Jilin, Ningxia and Xinjiang);

Early and middle japonica rice of early maturity (Inner Mongolia, Liaoning, Jilin, Heilongjiang and Ningxia);

The number of regional testing sites in every production cycle shall be no less than twenty and they shall be distributed in different county-level administrative regions in no less than four provinces; the number of production testing sites shall be no less than the number of regional testing sites, and they shall be distributed in different county-level administrative regions.

Article 10. Requirements on testing group, the ecological layout of testing site and their number for hybrid corn varieties whose testing are conducted by applicants:

Very early spring corn group (Hebei, Jilin, Heilongjiang, Inner Mongolia and Ningxia);

Northeast early spring corn group (Jilin, Heilongjiang and Inner Mongolia);

Northeast middle spring corn group (Liaoning, Jilin, Heilongjiang and Inner Mongolia);

Northwest spring corn group (Inner Mongolia, Shaanxi, Gansu, Ningxia and Xinjiang);

The number of regional testing sites in every production cycle shall be no less than twenty and they shall be distributed in different county-level administrative regions in no less than three provinces; the number of production testing sites shall be no less than the number of regional testing sites, and they

shall be distributed in different county-level administrative regions.

Group of Spring Corn in the east of North China (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia, Liaoning and Jilin);

Huang-Huai-Hai Summer Corn Group (Beijing, Tianjin, Shanxi, Hebei, Jiangsu, Anhui, Shandong, Henan and Shaanxi);

Southwest spring corn group (Hubei, Hunan, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan and Shaanxi);

The number of regional testing sites in every production cycle shall be no less than forty and they shall be distributed in different county-level administrative regions in no less than seven provinces; the number of production testing sites shall be no less than the number of regional testing sites, and they shall be distributed in different county-level administrative regions.

Article 11. For varieties that have gained the provincial registration, when their applicants conduct production testing in areas of one ecological type in neighboring provinces, autonomous regions and municipalities, their production testing shall last no less than two production cycles and there shall be no less than five sites in every neighboring provinces and the total number of sites shall be no less than ten in every production cycle, and they shall be distributed in different country-level administrative regions.

Article 12. The comparison variety in regional testing and production testing shall be consistent with that used in national variety testing in the same ecological area in the same time period.

Article 13. In accordance with requirements of corresponding crop testing guidelines, DUS detection is conducted in synchronization with variety testing.

DUS detection is carried out by the New Plant Variety Testing Center of the Ministry of Agriculture. Variety standard samples are taken from those used in DUS detection and are saved by the agency designated by Ministry of Agriculture.

Article 14. When regional testing and production testing are conducted by applicants, the testing shall go through variety testing inspections stipulated by the Article 22 of Variety Registration Measures.

Chapter IV Submission for Registration

Article 15. Applicants shall submit testing site data, summary result, and summary report of self-owned varieties whose regional testing, production testing and DUS detection are completed to the Office of National Crop Variety Registration Committee within 60 days after finishing these testing.

For varieties that have gained the provincial registration and have testing data for two consecutive years in over ten production testing sites of one ecological type in neighboring provinces, autonomous regions and municipalities, applicants shall submit their provincial certificate, the copy of the approval notice, summary report on production testing carried out by breeders, appraisal report on resistance in neighboring provinces and DUS detection report to the Office of National Crop Variety Registration Committee.

Applicants shall submit a commitment letter to ensure authenticity of relevant materials along with the submission for registration.

Article 16. The National Crop Variety Registration Committee carries out variety registration in accordance with requirements of Variety Registration Measures.

Chapter V Supervision and Administration

Article 17. Applicants shall be responsible for the authenticity of variety testing result and relevant materials they submit. In case of falsification, their variety testing qualification will expire, registered varieties will be revoked, and applicants and related persons will be investigated in accordance with laws.

Article 18. Applicants shall be responsible for variety adaptability and resistance. However, they are exempt from responsibilities in following cases:

(1) production losses are caused by force majeure;

(2) losses are caused by planters' going beyond the risk scope on the seed label or instructions, or losses are caused by not being planted in suitable areas.

Article 19. Registered varieties will be revoked if heavy production losses are caused by their serious defects.

Article 20. The National Crop Variety Registration Committee and its staff are obliged to keep confidential about business secrets of applicants which they obtain in the process of registration, and shall not provide seeds used for variety registration to others or make illegal interests.

Article 21. Staff for variety registration shall be given administrative sanction in accordance with law, when they commit falsification, irregularities, abuse of power, dereliction of duty and corruption; they shall be given criminal sanction when they commit a crime.

Chapter VI Supplementary Provisions

Article 22. Self-owned variety is referred to varieties that are bred independently or cooperatively by seed enterprises and whose intellectual property rights are owned by seed enterprises.

Article 23. For varieties that have entered the green channel of variety registration, they are excluded from the application for the unified national variety testing.

Article 24. This Guideline takes into effect on May 26, 2014.

National Crop Variety Registration Committee

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