



Foreign Agricultural Service

GAIN Report

Global Agriculture Information Network

Scheduled Report - public distribution

Date: 11/2/1999

GAIN Report #KS9095

Korea, Republic of

Planting Seeds

Annual Report

1999

Prepared by: **William L. Brant**
U.S. Embassy

Drafted by: Sunchul Choi/Michael T. Henney

Report Highlights: Korea's vegetable seed production continues to expand to meet strong year-round consumer demand for fresh vegetables. While the U. S. maintains a dominant player position in a shrinking grass and forage market, it retains only a 10-percent share position in the expanding vegetable seed market. Policy shifts are evident with Korea's acceptance of various principles encoded in the International Plant Protection Convention (IPPC) and International Union for the Protection of New Varieties of Plants (UPOV). Biotechnology, like elsewhere in the world, garners press coverage for various special interest consumer groups, and quiet adulation from the scientific community focus on meeting tomorrow's food requirements.

Includes PSD changes: No
Includes Trade Matrix: No
Annual Report
Seoul [KS1], KS

SECTION I: SITUATION AND OUTLOOK	2
Plant Health:	2
Seed Certification, Varietal Approval and Intellectual Property Rights:	3
Tariff Changes:	3
Genetically Modified Organisms (GMOs)/Biotechnology:	3
SECTION II: STATISTICAL TABLES	4
Table 1: Korea - National Land Use, 1997 - 1998	4
Table 2: Korea - Cultivated Land Use Patterns, 1997-1998	4
Table 3: Korea - Supply of Planting Seeds for Grass and Forage	5
Table 4: Korea - CY 1998 - 1999 Supply of Forage Seed	6
Table 5: Korea - Situation of Pasture Land	6
Table 6: Korea - List of National Recommended Cultivars of Grass and Forage Crops	7
Table 7: Korea - Vegetable Seed Production	9
Table 8: Korea - Applied Tariff Schedule for Planting Seeds	10
Table 9: Korea - MY 1998/99 (July/June) Planting Seed Imports	11
Table 10: Korea - MY 1998/99 Planting Seed Exports	12
Table 11: Korea - CY1999 Supply of Forage and Grass Seed	13
Table 12: Korea - Imported Seed Requiring Adaptability Test	14
Table 13: Korea - The List of Protected Plant Varieties	15

SECTION I : SITUATION AND OUTLOOK

In MY 1999, domestic production of grass and forage seed remains negligible. The Government's urgency to spur production of such seed, in an effort to mitigate the country's rising bill for imported seed in 1998 as the economic crisis deepened, has waned. Government support for domestic production will remain the catalyst for any future expansion effort in this sector as the forage-able land base will most likely continue to give way to urban development.

Domestic production of vegetable seed continues to expand in the wake of rising demand from a growing green-house industry. Seed output is reported up by Korean firms producing seed stock in Korea and contracting for production in other countries. Five firms continue to dominate the vegetable seed industry, controlling roughly 85 percent of the market.

Government seed production policy remains unchanged with developmental assistance still targeted for five types of seed: rice, barley, soybean, corn and potato. The national Seed Management Office (NSMO) (<http://www.seed.go.kr>) is the organization charged with production, processing, and distribution of the five targeted seed types domestically. To date in 1999, NSMO has distributed the following quantities of seed: rice - 12,623 MT, barley - 2,524 MT, soybean - 474 MT, corn - 248 MT, and potato - 8,479 MT.

In MY 1999, the United States should remain a major supplier of grass, forage and lawn seeds in the estimated US\$100-125 million Korean planting seed market. The U.S.' strength in this market is its broad array of seeds, such as: corn, rye, sorghum, lucerne seed, clover seed, ryegrass, fescue seed, Kentucky bluegrass, orchard grass and lawn seed. In MY 1998, the U. S. share of the US\$11 million imported grass, forage and lawn seed market stood at 69 percent, on a quantity basis, and 73 percent, on a value basis. While the U. S.' competitive position in the imported grass, forage and lawn seed market should remain strong over the next three to five years for reasons stated above, contraction in the arable land base devoted to grass and forage production gives one pause on the longevity of this market and on the correlating increase in competition that will evolve in for the shrinking market.

In the US\$25 million imported vegetable seed market, the U. S. garnered only a 19-percent share, on a quantity basis, and 10 percent, on a value basis. U. S. company efforts should focus on penetrating the vegetable seed market, already double the size of the grass, forage and lawn seed market, which is still expanding.

Competition from international seed suppliers originates from Australia for oats and Sudan grass, from China for other grasses and flowers, from Japan for vegetable and from Canada for rye seed.

Plant Health:

Korea revision to the Plant Protection Act, effective August 6, 1999, incorporates changes in the International Plant Protection Convention (IPPC) allowing for application of "regulated" pest quarantine procedures against "non-regulated" pests under specific conditions.

"No Additional Change Since KS8107, dated 11/13/98"

Seed Certification, Varietal Approval and Intellectual Property Rights:

Intellectual Property Rights (Plant Variety Protection/Plant patents):

In October 1999, Korea submitted its Seed Industry Act to the board for the International Union for the Protection of New Varieties of Plants (UPOV) for review. This action reflects a change in Korea's previous position which held the UPOV to be redundant given OECD's role in this area already. Korea now states it believes membership in the UPOV will secure higher quality seed for consumers and strengthen intellectual property rights for breeders. A major revision to the Seed Industry Act is to require all new seeds introduced to Korea to go through a formal varietal approval process.

"No Additional Change Since KS8107, dated 11/13/98"

Tariff Changes:

The July-December 1999 applied tariff rates on imported rye, oats and sorghum for forage cultivation, is set at "zero" percent, if accompanied by a 'Certificate of Import Tax Break' issued the National Livestock Cooperative Federation (NLCF).

Genetically Modified Organisms (GMOs)/Biotechnology:

The Ministry of Agriculture's Rural Development Administration (RDA) is currently conducting biotech. research in the areas of pesticide-resistant rice and cucumber, disease-resistant red pepper, cabbage, Perilla seed and tomato, virus-resistant potato and insecticide-resistant Chinese cabbage.

Regulations currently in the offing would address production and labelling of biotech enhanced seeds. Irrespective of the evolving regulatory regime, RDA estimates Korea is still five to six-years away from commercial production of biotech enhanced seeds.

SECTION II: STATISTICAL TABLES

Table 1: Korea - National Land Use, 1997 - 1998

Korea - National Land Use, 1997 - 1998				
	1997		1998	
Land Use:	1,000 HA	Percent	1,000 HA	Percent
Cultivated Land	1,924	19.4%	1910	19.2%
-Rice Paddy Field	1,163	11.7%	1157	11.6%
-Upland	761	7.7%	753	7.6%
Forest	6,533	65.7%	6441	64.8%
Other	1,480	14.9%	1590	16.0%
Total	9,937	100%	9941	100%

Source: The Ministry of Agriculture and Forestry

Table 2: Korea - Cultivated Land Use Patterns, 1997-1998

Korea - Cultivated Land Use Patterns, 1997-1998		
Items	1997	1998
	1,000 HA	1,000 HA
Rice	1,052	1,059
Barley & Wheat	70	83
Other Grains	30	30
Beans	122	120
Potatoes	40	38
Vegetables	285	278
Special Crops	108	115
Orchards	174	173
Mulberry	1	1
Other Permanent Crops	26	NA
Horticulture Crops	89	NA
Others	101	220

Total	2,142	2,118
-------	-------	-------

Source: The Ministry of Agriculture and Forestry

Note: Differences in cultivated land reported in Tables 1 & 2 reflect double cropping. Double cropping patterns are shifting from rice/barley production to rice/greenhouse vegetable production.

Table 3: Korea - Supply of Planting Seeds for Grass and Forage

Korea - Supply of Planting Seeds for Grass and Forage (Metric Tons, Calendar year basis)						
	Grass		Forage			Total
Year	Import	S. Total	Domestic ^{1/}	Import	S. Total	
1991	185	185	294	2,949	3,243	3,428
1992	245	245	213	3,276	3,488	3,733
1993	286	286	169	3,696	3,865	4,151
1994	261	261	161	4,131	4,292	4,553
1995	212	212	64	3,835	3,899	4,111
1996	210	210	49	4,078	4,127	4,337
1997	190	190	73	4,215	4,288	4,478
1998	173	173	179	4,257	4,436	4,609
1999	102	102	90	3,779	3,869	3,971
2000 ^{2/}	90	90	70	3,500	3,570	3,660

^{1/} Domestic forage seeds are mainly composed of corn and rye through 1994. In 1995 the Korean government stopped supplying rye seed.

^{2/} post's forecast

Source: The National Livestock Cooperative Federation (NLCF)

Table 4: Korea - CY 1998 - 1999 Supply of Forage Seed

Korea - CY 1998 - 1999 Supply of Forage Seed (1,000Kg)		
Commodity	CY1998	CY1999
Corn	450 (179)	415 (90)
Sorghum	9	10
Rye	2,819	2,541
Rapeseed	23	14
Oats	500	384
Sudan Grass	325	277
Italian Rye Grass	310	228
Total	4,436	3,869

Note: Numbers in parentheses indicated domestic production.

a/ Contracted basis with NLCF.

Source: The National Livestock Cooperative Federation (NLCF)

Table 5: Korea - Situation of Pasture Land

Korea - Situation of Pasture Land (Hectare)			
Year	Total	Created Land 1/	Disappearance
1985	80,732	5,111 (5,856)	184
1990	89,903	616 (1,001)	470
1995	66,301	413 (971)	3,586
1996	62,716	373 (481)	3,477
1997	59,236	400 (1,224)	4,156
1998	56,715	882 (2,014)	3,488
1999 2/	53,715	na	na
2000 2/	51,000	na	na

1/ Numbers in parentheses indicates government budgeted amount (Korean won, million) for creation of new pasture land.(US\$1.00 = Korean Won 1,186 based on available monthly data as of July 1999)

2/ Post's estimate.

Source: The Ministry of Agriculture and Forestry (MAF)

Table 6: Korea - List of National Recommended Cultivars of Grass and Forage Crops
(As of December 1998)

GRASSES	
Orchard grass	Hapseong # 2, Potomac, Frode, Frontier, Ambassador, Hallmark, Summer Green, Amba, Warrior, 93E.
Tall fescue	Fawn, Alta, Festorina, Festorina, Felopa, AU-Triummph, Cajun, Montebello.
Timothy	Climax, Clair, Odenwalder, Hokuo.
Perennial Rye grass	Norlea, Taptoe, Reveille, Bastion, Ellett, Bison, Tetrelite, Friend.
Kentucky Bluegrass	Kenblue, Monopoly.
Red Top	Streaker.
Reed Canary grass	Frontier, Venture, Vantage
Meadow Fescue	Joma
Bromegrass	Regar
LEGUMES	
Alfalfa: Pacer	Pacer, Scout, Team, Luna, Vernal, 5444, Drummor
White Clover	California Ladino, Regal
Red Clover	Kenland, Titus, Atlas, TR2000.
Birdfoot Trefoil	Empire, Viking.
FORAGE CROPS	
Corn	Suwon 19, Hwoing-Sung-Ok, Kwang-An-Ok, Choong-Bu-Ok, P3352, P3282, P3144W, P3394, P3525, P3156, P3163, P3514, P3489, P3172, P3223, P3310, P3313, P3130, DK689, DK729, DK713, DK501, G4743, G4624, GL499, NC5514, GW6959
Sorghum-Sudan grass Hybrid	P988, P855F, G83F, Jumbo, TE-Haygrazer, Sordan 79, TE-Haygraser-R, GW9110G, NC+855, SX-17, Speed Feed, G-7, Turbo 9, TE-Evergreen.
Sorghum-Sorghum Hybrid	P931, P947, P956, NK-367, TE-Silomaker
Rye	Pal-Dang, Shin-Kee, Keum-San-Jae-Rae, Chin-An-Jae-Rae, Choon-Choo-Ho-maek, Homil22. Koolgrazer, Elbon, Vita-graze, Bonel, Athens Abruzzi, Maton, Wrens abruzzo, Kodiak, Wintermore, Danko, Wintergrazer 70, Luchs, Olkon, Bates.

Oats:	Sam-Jeol-Gui-Ree, Me-Gui-Ree. Cayuse, Magum, Foothill, West , Murray, Swan, Ensiler, Yilgarn, Palinup, Cashel, Irwin, Dane.
Forage Rape	Akela, Velox, Ramon, Sparta, Barnapoli, Cheong-Ye-Dan-Gyo 4-Ho,
Italian rye grass	Dalita, Tetrone, Barmultra, Tetraflorum, Bettina, Wencke, Gorde, Sikem, Bartissimo, Wilo, Combata, Tosca, Florida 80, Tachiwase, Marahall, Grazer, TAM90, Typhoon.

Source: National Livestock Cooperative Federation

Table 7: Korea - Vegetable Seed Production

Korea - Vegetable Seed Production (Liters, Calendar Year)						
Commodity	1997			1998		
	Total	Local production	Overseas Production	Total	Local production	Overseas Production
White Radish	1,535,577	643,662	891,915	2,091,208	853,021	1,238,187
Chinese Cabbage	257,551	251,928	41,623	454,046	364,510	89,536
Cabbage	7,144	7,144	0	46,517	10,069	36,448
Onion	63,782	30,380	33,402	80,116	36,023	44,093
Welsh Onion	224,288	20,354	203,934	334,169	11,856	322,313
Carrot	135,178	17,800	117,378	121,481	9,942	111,539
Lettuce	109,520	4,920	104,600	110,416	2,790	107,626
Spinach	239,922	15,450	224,472	191,430	14,989	176,441
Red Pepper	213,424	28,732	184,692	89,372	9,958	79,414
Tomato	2,392	160	2,232	776	20	756
Melon	7,099	5,401	1,698	7,082	4,972	2,110
Cucumber	16,654	12,505	4,149	14,858	5,474	9,384
Water Melon	122,327	14,931	107,396	96,956	4,199	92,757
Squash	94,831	28,338	66,493	46,273	9,709	36,564
Others	-	-	-	215,596	-	215,596
Total	3,029,689	1,045,705	1,983,984	3,900,296	1,337,532	2,562,764

Source: Korean Seed Association

Table 8: Korea - Applied Tariff Schedule for Planting Seeds

Korea - Applied Tariff Schedule for Planting Seeds (Percent)							
Commodity	H.S. Code	1999			2000		
		General rate	In-Quota Rate	Out-of-quota rate	General rate	In-Quota rate	Out-of-quota rate
Peas	0713.10.1000	30	na	na	30	na	na
Beans	0713.31.1000	30	30	641.3	30	30	634.5
Red Beans	0713.32.1000	30	30	444.2	30	30	439.5
Kidney Beans	0713.33.1000	30	na	na	30	na	na
Wheat 1/	1001.90.9010	5(2.4)	na	na	5(2.28)	na	na
Rye 2/	1002.00.1000	3(0)	3	114.8	3(0)	3	113.5
Oats 2/	1004.00.1000	3(0)	3	585.6	3(0)	3	579.4
Forage Corn 3/	1005.10.0000	0	0	346.5	0	0	342.8
Sweet Corn 3/	1005.10.0000	0	0	390.6	0	0	386.4
Sorghum 2/	1007.00.0000	3(0)	3	822.7	3(0)	3	814.0
Millet 2/	1008.20.1010	3(0)	3	19	3(0)	3	18.8
All Seed	1209.xx.xxxx	0	na	na	0	na	na

1/ Number in parentheses is a temporary duty.

2/ Commodity imported under the reduced tariff policy. CMA annual quota through 2003 for the respective commodity is as follows: Rye - 1,327.3 MT, Oats - 597.3 MT, Sorghum - 13.7 MT, Millet - 0.3 MT (until 2001) and 0.4MT (until 2004).

3/ Corn seed for forage and sweet corn, CMA annual quota - 247 MT, imported at free tariff rate through 2003. Ministry of Agriculture and Forestry will allocate additional quota, if requested by farmers.

Source: Korea Customs Research Institute, Tariff Schedules of Korea.

Table 9: Korea - MY 1998/99 (July/June) Planting Seed Imports

Korea - MY 1998/99 (July/June) Planting Seed Imports (Unit: KG; US\$,000)				
MY 1998/99(July/June)	From World		From U.S.	
Commodity	Volume	Value	Volume	Value
Corn	439,978	2,830	439,975	2,830
Rye	4,161,630	2,231	3,171,300	1,710
Oats	653,460	319	17,500	11
Sorghum	11,820	35	11,820	35
Lucerne Seeds	12,576	42	6,919	27
Clover Seeds	9,957	45	9,957	45
Fescue Seeds	678,928	1,112	656,028	1,075
Kentucky Blue Grass	69,722	210	69,722	210
Rye Grass	808,950	1,295	585,670	910
Timothy Grass	9,238	17	5,478	9
Sudan Grass	566,672	1,111	262,072	468
Orchard Grass 1/	217,389	414	133,229	234
Other Grass	203,156	583	37,728	175
Herbaceous Plants	31,129	1,306	2,077	269
Vegetable Seeds	1,947,487	24,517	361,420	2,479
Seeds of other forest tree	96,144	264	40,353	89
Seed of fruit tree	93,805	111	0	0
Lawn Seed	283,716	1,033	208,137	472
Other	154,955	560	29,221	84
Total	10,450,712	38,035	6,141,795	10,306

1/ consisted of orchard, reed canary and red top.

Source: Korean Customs Service

Table 10: Korea - MY 1998/99 Planting Seed Exports

Korea - MY 1998/99 Planting Seed Exports (Unit: KG; US\$,000)				
MY 1998/99(July/June)	To World		To U.S.	
Commodity	Volume	Value	Volume	Value
Orchard grass	9,380	18	0	0
Other Grass	720	10	0	0
Herbaceous Plants	5,143	145	5	7
Vegetable Seed	346,998	12,804	10,123	1,356
Seed of Other Forest Tree	15,841	219	0	0
Lawn Seed	10,172	248	4,172	54
Other	110,951	760	0	0
Total	499,205	14,204	14,300	1,417

Source: Korean Customs Service

Table 11: Korea - CY1999 Supply of Forage and Grass Seed

Korea - CY1999 Supply of Forage and Grass Seed (Calendar Year Basis)			
Commodity	Spring Planting	Fall Planting	Total
Orchard grass	14,060	43,380	57,440
Tall fescue	3,460	13,880	17,340
Timothy	1,580	2,400	3,980
Kentucky bluegrass	1,680	3,300	4,980
Perennial Rye grass	720	8,460	9,180
Reed canary grass	120	580	700
Alfalfa	1,400	2,780	4,180
White Clover	1,080	1,920	3,000
Red Clover	380	660	1,040
Grass Seed Total	24,480	77,360	101,840
Forage Rape	2,870	11,250	14,120
Forage Oat	92,220	291,900	384,120
Winter Rye	0	2,540,780	2,540,780
Italian Ryegrass	9,780	218,060	227,840
Sudan grass F1	276,920	0	276,920
Sorghum F1	9,820	0	9,820
Corn	324,760	0	324,760
Forage Seed Total	716,370	3,061,990	3,778,360
Total Imported Seed	740,850	3,139,350	3,880,200
Domestic Corn 1/	172,000	0	172,000
Grand Total	912,850	3,139,350	4,052,200

1/ excluded 37 MT of sweet corn and 37 MT of corn seed donated to the North Korea.

Source: National Livestock Cooperative Federation

Table 12: Korea - Imported Seed Requiring Adaptability Test

Korea - Imported Seed Requiring Adaptability Test		
Crop items	Varieties	Authorized Organization
Food Grains (8)	Wheat, Rye, Millet, Sorghum, Buckwheat, Red Bean, Green Bean and Sweet Potato	Korean Seed Association Phone: 82-2-578-7637/8, Fax: 82-2- 578-7639.
Vegetable (17)	White radish, Chinese cabbage, Cabbage, Water melon, Squash, Hot pepper, Tomato, Cucumber, Melon, Welsh onion, Onion, Carrot, Spinach, Lettuce, Strawberry, Garlic and Ginger	Korean Seed Association Phone: 82-2-578-7637/8, Fax: 82-2- 578-7639.
Fruits Trees (20)	Apple, Pear, Peach, Grapes, Sweet Persimmon, Plum, Ume, Kiwi, Tangerine, Persimmon, Apricot, Chestnut, Walnut, Jujube, Cherry, Fig, Chinese Quince, Banana, Pine Apple, Citron	Korea Fruit Tree Nursery Growers Association Phone: 82-417- 575-5337, Fax:82-417- 574-3855;
Flower (10)	Chrysanthemum, Carnation, Gypsophila, Gerbera, Statice, Rose, Poinsettia, Dendrobium, Cymbidium, Phalaenopsis	Korea Flower Seed Association Phone: 82-2- 577-2014, Fax: 82-2- 577-2015
Mushroom (11)	Agaricus Bisporus, Pleurotus Ostreatus, Ganoderma Lucidum, Flammulina Velutipes, Lentinus Edodes, Grifola Frondosa, Auricularia Auricula, Agrocybe Aegerita, Lyophyllum Ulmarium, Hypsizigus Marmoreus, Wolfiporia Cocos, Phellinus Linteus	Korea Spawn Cultivation Association Phone: 82-331-234-5201, Fax: 82-331- 234-5202
Herbage (22)	Pogostemon Herb, Korean Angelica, Liriope Tuber, Pinellia Tuber, Saposhnikovia Root, Atractylodes Rhizome White, Adenophora Triphylla, Dioscorea Rhizome, Bupleurum Root, Acanthopanax Root Bark, Achyranthes Root, Paeonia Lactiflora Pall, Rehmannia Glutinosa Liboschitz, Atractylodes Rhizome, Cnidium Rhizome, Alisma Rhizome, Pleuropterus Multiflorus Turcz, Cyperus Rhizome, Scutellaria Root, Astragalus Root, Anthriscus Sylvestris, Morinda Officialis Mow,	Korean Medicine Herbs Association Phone: 82-2-967-8133, Fax: 82-2-965-0643

Grass and Forage (20)	Orchardgrass, Tall Fescue, Timothy, Perennial Rye Grass, Kentucky Bluegrass, Red Top, Reed Canarygrass, Alfalfa, White Clover, Red Clover, Birdfoot Trefoil, Meadow Fescue, Bromegrass, Corn, Sudangrass, Sorghum-Sudangrass Hybrid, Sorghum-Sorghum Hybrid, Rye, Oats, Forage Rape and Italian Rye Grass	National Livestock Cooperative Federation Phone: 82-2-2224-8808/9, Fax: 82-2-489-3982
Ginseng	-	Korean Medicine Herbs Association Phone: 82-2-967-8133, Fax: 82-2-965-0643

Source: Ministry of Agriculture and Forestry

Table 13: Korea - The List of Protected Plant Varieties

Korea - The List of Protected Plant Varieties	
Field crop	paddy rice, wheat, barely, soybean, corn(excluded corn seed for forage), potato
Vegetable	white radish, Chinese cabbage, cabbage, water melon, squash, hot pepper, tomato, cucumber, melon, welsh onion, onion, carrot, spinach, lettuce
Fruits	apple, pear, peach
Flower	rubyball(cactus)
Grass/Forage	rye grass, tall fescue, red clover

Source: Ministry of Agriculture and Forestry