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Planting Seeds

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Report Highlights:
The situation has changed very little since the 1999 report except in the biotechnology area, where 1999 saw increased visibility and conflict as the planting of biotech seeds became imminent. Best prospects for U.S. seeds are still in the vegetable seed sector.

Includes PSD changes: No
Includes Trade Matrix: No
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EXECUTIVE SUMMARY

The situation has changed very little since the 1999 Planting Seed Report (BR9622) except in the biotechnology area, where 1999 saw increased visibility and conflict as planting of seeds developed through biotechnology went from the theoretical to reality with the prospect of the imminent planting of Monsanto's Roundup Ready Soybeans (RRS) . Best prospects for U.S. seeds are still in the vegetable seed sector where, despite the economic slowdown in the Brazilian economy in 1998 and 1999, there is expected to be a continued need for high quality seeds, for which Brazil, as yet, does not have the technical production capacity. However, with the increasing investment in this area, this will gradually change in the future. As the Brazilian economy recovers in 2000, this trend should continue or accelerate. In the livestock sector the continuing emphasis on increasing yields and lowering slaughter age of steers continues to lead to increased pasture improvement and thus the need for high quality forage seeds.

Implementation of the revised Seed Law (revised in 1997) and the Cultivar Law (passed in 1997), continue to be on track with more species included in the coverage and/or more specific cultivars registered. In the biotechnology area, public and press attention to the issue of biotechnology increased dramatically as the planting of biotech soybeans became imminent in Brazil. On June 21, 1999, a Brazilian judge granted an injunction against the commercial sale of Monsanto's Roundup Ready Soybeans (RRS) and the issue remains tied up in the courts at this time. As a result of the injunction, Monsanto lost an entire planting season in Brazil. In the phytosanitary arena, imported seed still face a large number of measures and regulations. As Brazil continued to implement MERCOSUL harmonization of plant health regulations within the country, it is expected that additional measures will gradually be imposed.

PRODUCTION

Market Channels and Facilities

According to the Associação Brasileira dos Produtores de Sementes (ABRASEM; in English, the Brazilian Association of Seed Producers), there are currently 10 state (or Federal District) Seed Associations of seed producers which are members of the National Association (working South to North, the ten states that have associations are: Rio Grande do Sul (RS), Santa Catarina (SC), Paraná (PR), Mato Grosso do Sul (MS), São Paulo (SP), Mato Grosso (MT), Goiás (GO), the Distrito Federal (DF), Minas Gerais (MG), and the Northeastern Region's state of Ceará (CE). These states are the majority of the states in the Center-South Region which accounts for a large amount of all the agricultural activity in the country. In the remainder of the states, agriculture is generally at a lower level of development and technology level.

The following table shows the structure of the Brazilian seed sector included in the ABRASEM membership.

	1997	1998	1999
Association Members/Growers	685	511	688
Processing units	1,245	1,045	1,330
Processing capacity (mt/day)	76,695	92,100	98,844
Seed storage units	1,371	980	1,757
Total storage capacity (mt)	5,072,060	4,987,520	4,956,483
Quality Control Laboratories	16	208	208

Source: ABRASEM

Since the beginning of the opening of the Brazilian economy in about 1990, and the solidification of this opening in the 1994 economic stabilization plan, the "Real Plan", technology use has increased as Brazilian farmers were challenged to become more efficient by increased competition. As a result, the use of improved seeds has increased as a percentage of total seed needs, especially in the Center-South Regions where agricultural production is more commercial and where there is less subsistence agriculture.

The following table shows the production of improved seed for 97/98 and 98/99 for selected crops, the 98/99 planted area and the demand for improved seeds. ABRASEM considers total seed use in Brazil as the "potential" demand for improved seed and the current use of improved seed to be the "effective" demand for improved seed.

Brazilian Use of Improved Seed for Selected Crops

Species	98/99 Seed Production	97/98 Seed Production	98/99 Planted Area	Potential Demand for Improved Seed	Effective Demand for Improved Seed	Level of Utilization of Improved Seed
Wheat	198,986	1,418,463	1,184,012	172,502	157,659	91 %
Soybeans	952,821	805,135	12,062,309	881,241	684,831	78 %
Corn	167,662	147,795	9,012,724	166,241	126,783	76 %
Cotton	13,075	7,508	534,248	7,909	5,954	75 %
Rice	128,447	96,664	2,248,664	241,431	119,482	49 %
Dry Edible Beans	20,696	20,229	2,054,826	105,124	15,529	15 %
TOTAL	1,481,687	2,495,794	27,096,783	1,575,144	1,110,239	70.5 %

Source: ABRASEM
(Production and Seed Demand in metric tons, Area in hectares, Level of Improved Seed Use in Percent)

In addition to the private sector Associations, the Empresa Brasileira de Pesquisa Agropecuaria (EMBRAPA; in English the Brazilian Agricultural Research Company), a quasi-governmental agency within the Brazilian Ministry of Agriculture also is a large producer and seller of seeds. EMBRAPA's counterpart in the United States would be USDA's Agricultural Research Service (ARS).

Partially as a result of the passage of the "Cultivar Law" (Intellectual Property Protection) in April 1997, an increasing number of multinationals have entered the Brazilian plant breeding and improvement sector. For example, in 1998 and early 1999, Monsanto acquired Sementes Agroceres, Sementes Cargill, and Sementes BrasKalb in the corn sector and FT Melhoramento in the soybean sector (Sementes = seeds, Melhoramento = Improvement). Mycogem acquired DinaMilho, Sementes Colorado, Hata Melhoramento, and FT Milho. Agrevo was building a research center in MS and has also entered the rice research area. Dupont acquired the Pioneer corn seed division, and Dois Marcos soybean improvement division. Novartis entered a joint venture with COOPASAP in the soybean improvement area.

MARKETING OUTLOOK

The situation has changed very little since the 1999 Planting Seed Report (BR9622). Best prospects for U.S. seeds are still in the vegetable seed sector where, despite the economic slowdown in the Brazilian economy in 1998 and 1999, there is expected to be a continued need for high quality seeds, for which Brazil, as yet, does not have the technical production capacity. However, with the increasing investment in this area, this will gradually change in the future. As the Brazilian economy recovers in 2000, this trend should continue or accelerate. In the livestock sector the continuing emphasis on increasing yields and lowering slaughter age of steers continues to lead to increased pasture improvement and thus the need for high quality forage seeds. Post estimates that the annual increase in improved pasture could be a high as five percent. This shift in production practice could represent an opportunity for forage seeds suitable for the various Brazilian, tropical, sub-tropical, and arid climates. (Note: See phytosanitary concerns on grass seeds below.)

POLICY

General Agricultural Policy

During the last decade the character of Brazilian agriculture has been changing and the use of higher levels of technology, including improved, higher yielding seed varieties, is gradually increasing. Since the implementation of the economic stabilization plan, the Real Plan, in mid-1994, government support and policy changed dramatically. Prior to the Real Plan, the Government was a major buyer, distributor, and seller of agricultural commodities (particularly in the grain sector). Since the Plan the government has gradually removed itself from direct management of markets and has let the market drive producer decisions to a greater degree. This has increased the economic incentives to increase yields and invest in better quality seeds. While the government has implemented some programs to facilitate the marketing of some major crops, in general it still can be said that Brazil's current agricultural policy is to intervene as little as possible in the sector when compared to the previous high level of control.

Planting Seed Production Policy

Direct government programs in the seed sector consist of research and development of new seed varieties appropriate to Brazilian growing conditions, seed production and the marketing of seed directly to producers, production credit, seed certification and surveillance, and education and training of seed producers. EMBRAPA (the Brazilian equivalent of USDA's Agricultural Research Service (ARS)) is an important producer and distributor of foundation seed (particularly for cotton, rice, dry beans, corn, potatoes, and soybeans) and is also responsible for approving import permits and overseeing the quarantine of imported seed. Though there has been greater private investment in the seed sector following the passage of the Cultivar Law in April 1997, EMBRAPA is still responsible for a large portion of the market for foundation seeds. EMBRAPA also sells commercial seed directly to seed producers, cooperatives, farmers, and state governments. To some extent EMBRAPA competes with private industry in some types of seeds.

Seed Certification and Variety Approval

Under Brazil's basic Seed Law there are two officially recognized classes of seeds, certified and surveyed. The two systems are quite similar and produce generally the same quality of seed, but the difference between the two systems is the level of official oversight over the production process. Certified seed is produced with a greater degree of outside oversight and thus a higher level of quarantine associated with the quality of the seed. In the case of certified seed the seed must be produced from basic or other certified seeds and the number of generations away from pure parent stock seeds from which the certified seeds can be produced is limited. The certified seed is certified by some entity (can be public or private) outside of the company producing the seed. In the case of surveyed seed, the seed can be produced from other surveyed seed and there is no limit in regard to generations as long as the seeds produced fall within certain quality and identity norms. Surveyed seed is produced under the surveillance of the producer's responsible technician. Because of the additional costs and guarantees associated with certified seed, certified seed is more expensive than surveyed seed.

Prior to December 31, 1997, the Brazilian government had maintained a list of varieties that could be sold within Brazil and planted by producers. If a company wished to sell a certain type of seed, then the seed had to tested by EMBRAPA and then the government decided which varieties would receive official recommendations and be allowed to be sold within Brazil. However, as a result of harmonization within MERCOSUL, this procedure was changed to a less paternalistic and more market-oriented one.

Directive (Portaria) 527/97 of December 31, 1997 (published on Jan. 7, 1998) amended the basic Seed Law (Decree 81,771/78 of June 7, 1878) and established a National Registry of Cultivars (RNC) which has the responsibility of establishing the criteria by which varieties could be officially registered on a national list. In order for a variety to be registered it must meet certain minimum requirements for the determination of its "Cultivation and Use Value" (VCU). Directive 294/98 of October 14, 1998 (republished on October 26, 1998) is the first implementing legislation of Dir. 527/97 and establishes the minimum requirements of the VCU for eight (8) commodities (cotton, rice, potatoes, dry beans, corn, soybeans, sorghum, and wheat). It also contains prototype copies of the official forms to request the inclusion of a variety in the National Cultivar Registry. This is a separate and distinct process from the Cultivar Law which is Intellectual Property Rights legislation.

Intellectual Property Rights - Plant Variety Protection

After several years of discussion in the Brazilian Congress, the Cultivar Law, (Law 9,456/97) was passed on April 25, 1997 (published April 28, 1997). Up until that time, companies that produced or sold seeds had no legal protection and didn't receive any royalties for investing in research and development of new seed types. The policy was to concentrate on open-pollinating varieties of seeds in order that there could be freer distribution and access to seeds. The Brazilian government, via EMBRAPA, was the major developer of many varieties of seeds. Without any intellectual property protection, domestic companies invested less in research and development of new seed varieties than they would have otherwise. In addition, foreign companies were more reluctant to release varieties that they had developed because of the fear of having their products become part of the "public domain" in Brazil with no recourse to recoup the expenses of developing these varieties. As a result of the Cultivar Law there has been an increase in the amount of investment in the sector.

In December 1997, the majority of the seed producing entities in Brazil, both domestic and multinational, private and governmental, formed the Brazilian Association of Plant Breeding Companies (BRASPOV) as an industry wide effort to enforce the provisions of the Cultivar Law and insure their intellectual property rights in the seed sector. The stated goals of BRASPOV is to 1) protect the rights and defend the interests of its members, 2) assure the application and improvement of the current legislation, where illegal practices on production and marketing can be controlled, 3) collaborate with public and private companies with similar interests, 4) promote professional ethics on plant breeding issues, and 5) provide technical, judicial (legal) and administrative assistance and representation of its members in official and private institutions, at regional, national or international levels.

The first implementing legislation of the Cultivar Law , is Decree 2,366/97 of November 5, 1997 (published on November 7, 1997). It describes the procedure by which plant varieties can be provided intellectual property rights through a Cultivar Protection Certificate, including specific morphological, physical, biochemical, or molecular descriptors that identify the variety as unique. The competent authority for the protection of cultivars is the National Service of Cultivar Protection (SNPC) within the Ministry of Agriculture. A consultative and advisory body to the SNPC, the National Commission of Cultivar Protection (CNPC) was also created by Decree 2,366/97. The Commission consists of representatives from five government ministries and industry representatives. Decree 2,366/98 covers cotton, rice, potato, dry beans, corn, soybeans, sorghum, and wheat. No additional implementing legislation was passed during 1999 to expand protection beyond these eight commodities but there are plans to expand the law to apples, coffee, oranges, various types of grasses, lettuce, carrots, onions, and a few ornamental varieties.

From January 1, 1998, to June 9, 1999, there have been 82 Cultivar Protection Certificates granted; 3 cotton cultivars, 3 rice cultivars, 7 sugar cane cultivars, 3 dry bean cultivars, 59 soybean cultivars, and 7 wheat

cultivars. By December 10, 1999, the number had increased to 127 Cultivar Protection Certificates granted; 6 cotton cultivars, 7 rice cultivars, 24 sugar cane cultivars, 3 dry bean cultivars, 71 soybean cultivars, 12 wheat cultivars, 1 corn cultivar, and 3 sorghum cultivars. (Note: These are the cultivars that have completed the entire regulatory/registration process; there are 42 additional cultivars that are at the "provisionally certified" phase (1 cotton, 4 rice, 16 soybean, 2 wheat, 3 corn) while 25 more requests have been filed (1 dry bean, 15 soybean, 9 potato), and 52 cultivars are being analyzed prior to being filed (4 cotton, 6 rice, 4 dry bean, 33 soybean, 4 wheat, 1 potato).

PLANT HEALTH REGULATIONS

A substantial number of "shipment stuck on the dock" problems in the seed sector have been problems with shipments that arrive in Brazil with a USDA/Animal and Plant Health Inspection Service (APHIS) *re*-export certificate. The problem is with seeds grown in third countries which are then imported into the United States for further processing, testing, certifying, and other treatment. As APHIS can not attest to or certify as to conditions in the original country of origin, it is important at this time that these seeds for re-export from the United States still have the phytosanitary certificates from the original country of origin accompany the shipment as well as the re-export certificate from APHIS. As the seed sector becomes more interconnected and globalized this issue will likely become more important. During the first week of May 1999, at bilateral U.S.-Brazil meeting on phytosanitary issues of mutual interest, both sides agreed at the technical level to permit laboratory testing as an alternative on many of the requirements on many seed types. The next step for the implementation of this alternative is the publication of the Directive (Portaria) in the Diario Oficial.

Brazil continues to periodically implement new phytosanitary requirements on a variety of products, including seeds, as part of the regional harmonization of requirements and standards within MERCOSUL. These are based on the Southern Cone Plant Health Regional Committee (COSAVE) recommendations. Many local industry contacts are concerned that the costs of the new approval procedures which have been put into place, reportedly due to this MERCOSUL harmonization, are excessive. According to these contacts, Brazil is requiring Pest Risk Assessments (PRAs) for each species from every country of origin and that Brazil is using PRAs in an excessive , "cure-all" manner. As many of these companies are multi-national is scope, they grow seeds in many different countries for off-season production and feel that the Brazilian requirements do not take into account the level of quality control and assurance exerted by the companies themselves.

The most recent plant health issue has been Brazil's concern regarding *Myndus crudus* and Lethal Yellowing. On January 5, 1999, the Ministry of Agriculture published Normative Instruction 238/98 of December 30, 1998, which prohibits the importation of plant propagative material from countries infested or described in the scientific literature of a long list of species that are hosts of *Myndus crudus* and susceptible to lethal yellowing; not excluding other species that might later be identified as being hosts of this disease. This Normative Instruction is causing problems particularly with the export of U.S. forage seeds to Brazil. On June 8, 1999, the Ministry of Agriculture published Normative Instruction 9/99 of June 2, 1999, which revokes and replaces 238/98. The new Normative Instruction changes the regulation from an outright ban of the importation of certain species from countries infested or reported to be infested with *Myndus crudus* to allowing importation of the plant propagative material of the listed species only after the conclusion of a Pest Risk Analysis (PRA) for Lethal Yellowing. In 9/99 one additional species, *Poa spp*, is included as compared to the previous list in 238/98. Normative Instruction 9/99 also states that the costs of the PRA will be the responsibility of the "interested party", i.e., the exporter and/or importer.

Given the many changes that are occurring in this sector at the current time, due to ongoing regional harmonization of phytosanitary requirements as well as specific Brazilian issues of concern, U.S. seed exporters should check with APHIS/Plant Protection and Quarantine (PPQ) in Riverdale, MD, for additional information and the status of Brazilian phytosanitary import requirements at any given time.

In March 2000, the Brazilian Ministry of Health declared the use of Methyl Bromide illegal for fumigating wood and wood products in all ports and airports in Brazil in order to protect the health of humans in the areas. By analogy (or extension) the Ministry of Agriculture is also avoiding the use of Methyl Bromide as a fumigant for imported grains, fruits, and seeds as the implications of Methyl Bromide use on the agricultural products would be the same as on wood in terms of the intention of the Ministry of Health Directive.

BIOTECHNOLOGY AND GENETICALLY MODIFIED ORGANISMS (GMOs)

The National Technical Commission of Bio-Safety, the CTNBio, which has responsibility for biotechnology issues in Brazil was formed as a result of the 1995 Brazilian Bio-Safety Law. Law number 8,974/95 (published in the Diário Oficial on January 6, 1995) provides the legal framework and sets the standards and means for production, manipulation, transportation, marketing and consumption of genetically modified organisms (GMOs). Presidential Decree number 1,752/95, implements Law number 8,974/95 and established the CTNBio, which has the power to propose the National Biosafety Policy, including monitoring the technical and scientific development of GMOs, as well as standards and regulations.

The Commission is composed primarily of scientists from government and academia with representation also from industry and consumer groups. Not only does the CTNBio function to give recommendations to the government of Brazil on specific applications for product release and experimental planting, etc., it also plays an instrumental role in the development of both national and international biotechnology policy in Brazil.

The passage of the "Cultivar Law" (see above) has increased the incentives to invest in biotechnology. The government Agricultural Research Company (EMBRAPA) is also developing its capacity for biotechnology research and is developing varieties of plants using the technology but as of yet none of the varieties have been released for commercial production. The Ministry of Agriculture and Food Supply (MAA) is the legal entity which will issue import/export phytosanitary certificates for GMOs, as well as for cultivation and marketing. Any imports of seeds developed through biotechnology must have specific prior approval of the CTNBio.

Over the last year and a half, public and press attention to the issue of biotechnology increased dramatically as the planting of biotech soybeans became imminent in Brazil. In May 1999, the Chief of the National Service of Cultivar Protection (SNPC), Office of Rural Development (SDR), Ministry of Agriculture and Food Supply (MAA) announced that five varieties of MONSANTO GMO Soybeans would be included in the National Protected Cultivar Registry (in Portuguese: Listagem ou Cadastro Nacional de Cultivares Protegidos e Registrados). All seeds sold in Brazil must be on this Registry. Post has been told that the Registry is released by the SNPC to all federal and state inspectors every other month or so. The Registry is not published in the Diario Oficial (Federal Register).

On June 21, 1999, a Brazilian judge granted an injunction against the commercial sale of Monsanto's Roundup Ready Soybeans (RRS) and the issue remains tied up in the courts at this time. As a result of the injunction, Monsanto lost an entire planting season in Brazil. RRS will probably be the first biotechnology product to be allowed to be commercially marketed in Brazil. At a June 1, 1999, meeting between the Agriculture, Science and Technology, Justice (consumer protection office), Environment, and Health Ministries the following

decisions were taken:

1) Monitoring: To form a group (made of officials of several Ministries) to monitor the production and marketing of GMOs in Brazil during a five (5) year time period, and

2) Labeling: To form another group which is tasked with finalizing the rules under which GMOs would be labeled. The composition/members of this group have not yet been determined. The formation of this group will be announced by the Min. of Justice which has responsibility over labeling.

These groups have been formed by officials from different Ministries. The Labeling group finally published a biotechnology labeling proposal for public comment on December 2, 1999. The U.S. government submitted comments on the proposal in March 2000.

Prior to the events discussed above, there has not been a great deal of negative reaction to GMOs and biotechnology in Brazil, particularly when compared to the public reactions to such technology in Europe. Press coverage of the issues has included Green peace's efforts to combat the use of RRS seed as well as the controversy which RRS have caused in Europe. However, press coverage in Brazil also notes the expected cost savings to farmers who plant GMO soybeans. Producer interest in access to biotech products has generally been strong, due to lower costs of production, etc.

However, during the last year there has been a greater public reaction to the technology which seems primarily to be driven by concerns with access to the EU market for soybeans. For example, the governor of the state of Rio Grande do Sul (RS) has "banned" GMOs from the state because he believes that the state can gain some advantage in the EU market. At the current time, as there is no approval for any biotech products at the federal level, this "ban" is essentially a restatement of the situation at the national or federal level.

There are also some large European Union retailers looking for "GMO-free" areas in the Southern states of Brazil, from which to buy GMO-free soybeans. One of these groups is Carrefour, a French supermarket chain (the largest chain in Brazil), which reportedly is signing contracts with Brazilian producers in the South to buy a yearly volume of 300,000 mt of GMO-free soybeans. Press articles do not state whether or not Carrefour is offering any premium for GMO-free product.

TRADE

General

Brazil imported US$ 34.5 million worth of seeds (including seed potatoes) in 1998 and US$30.4 million in 1999. In terms of value, vegetable seeds continue to account for the majority of the Brazilian seed imports. From 1997 to 1999, vegetable seeds accounted for half to a third of all Brazilian imports of seeds in terms of value (see tables below). The United States is the leading exporters of vegetable seed to Brazil with a market share of 36-39 percent from 1997 to 1999. Israel, the EU, and Japan are the next largest exporters of vegetable seeds to Brazil. The second largest category of Brazilian seed imports is seed potatoes. From 1997 to 1999, seed potatoes accounted for between 10-15 percent of all Brazilian imports of seeds in terms of value. The largest exporters of seed potatoes to Brazil are the EU and Canada, and decreasingly Chile.

On the export side, Brazil exported US$ 60.8 million worth of seeds in 1998 and US$ 47.6 million in 1999. In terms of value, soybean seeds accounts for the largest portion of Brazilian seed exports. From 1997 to 1999, soybean seeds accounted for 50-86 percent of all Brazilian exports of seeds in terms of value (see tables below). The EU and MERCOSUL were the most important destinations for Brazilian soybean seeds from 1997 to 1999. The next two most important categories of Brazilian seed exports were forage seeds and wheat, corn, and rice seeds (as a group). From 1997 to 1999, forage seeds accounted for between 6-28 percent of all Brazilian exports of seeds in terms of value and wheat, corn, and rice seeds accounted for between 5-20 percent. The largest destination for Brazilian forage seeds is Latin America and the Caribbean (other than MERCOSUL). The largest destination for Brazilian wheat, corn, and rice seeds is MERCOSUL (Argentina, Uruguay, and Paraguay).

Competitor Activities
As MERCOSUL becomes more integrated, trade between Brazil and its MERCOSUL partners are gradually increasing and some companies are positioning themselves to take advantage of the regional integration. However, there will likely be some limitations on exchange of seeds of some commodities to the degree that environments differ. Post is not aware of any particular promotional activities by other exporting countries.

Tariffs
All applied tariff rates on seeds imported into Brazil are zero, with the exception of the duty on mushroom spawn which is five (5) percent. There have been no changes in import tariffs on planting seeds.

Non-Tariff Barriers
The only significant non-tariff barriers are phytosanitary requirements. See "Plant Health Regulations" section.

Export Subsidies
There are no direct export subsidies for seeds.

Export Restrictions
There are no export restrictions for seeds.

Market Share (of imports)
See tables below.

TRADE TABLES

Data below is based on Brazilian import and export statistics from the Ministry of Finance. Data for back years have been updated from previous reports.

Brazilian IMPORTS of Seeds

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
Seed Potatoes	6,996,569	3,891	11.2	8,684,434	5,041	14.6	4,915,820	3,438	11.3
Onion and Shallot Sets	125,000	30	0.1	340,443	35	0.1	13	3	0
Pulses for Seed	331,060	170	0.5	2,385,405	1,083	3.1	1,977,404	651	2.1
Wheat, Corn, Rice Seed **	44,139,134	9,501	27.2	1,315,863	904	2.6	927,197	481	1.6
Other Grain Seed	416,899	411	1.2	2,482,619	2,127	6.2	892,899	592	1.9
Soybean Seed	40,040	38	0.1	0	0	00	651,520	412	1.4
Other Oilseed Seed	186,081	690	2.0	145,734	768	2.2	236,493	1,296	4.3
Sugar Beet Seed	21,252	181	0.5	5,008	46	0.1	0	0	0
Beet Seed (not Sugar)	75,438	591	1.7	91,573	719	2.1	86,194	799	2.6
Forage Seed	160,708	662	1.9	349,973	1,024	3.0	128,692	372	1.2
Seeds of Flowering Plants	14,890	710	2.0	13,894	782	2.3	10,401	1,195	3.9
Vegetable Seeds	701,183	16,923	48.5	720,172	19,738	57.3	739,178	19,032	62.7
Other Seed	94,428	1,089	3.1	52,903	2,200	6.4	75,744	2,102	6.9
TOTAL	**53,302,682**	**34,887**	**100**	**16,588,021**	**34,467**	**100**	**10,641,555**	**30,373**	**100**

* – percentage share of total imports based on value.

** – Industry contact believe that the total1997 import statistics are overstated; the large numbers for imports of major grains from MERCOSUL could be partially responsible.

Seed Potatoes (HS 0701.10)

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	11,759	24	0.6	8,000	4	0.1	19,073	21	0.6
MERCOSUL	97,000	61	1.6	1,073,680	844	16.7	105,750	126	3.7
EU	2,100,480	1,764	45.3	3,363,200	2,258	44.8	2,368,520	2,068	60.2
Canada	2,610,500	779	20.0	3,200,450	975	19.3	2,032,328	684	19.9
Chile	619,800	577	14.8	581,250	542	10.8	271,050	228	6.6
Switzerland	556,300	524	13.5	456,890	382	7.6	110,880	95	2.8
Mexico	730	27	0.7	964	46	0.9	8,219	215	6.3
Israel	1,000,000	135	3.5	0	0	0	0	0	0
TOTAL	6,996,569	3,891	100	8,684,434	5,041	100	4,915,820	3,438	100

Onion and Shallot Sets (0703.10.11 and 0703.10.21)

	1997			1998			1999		
Country of Origin	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	0	0	0	0	0	0	0	0	0
MERCOSUL	100,000	20	66.7	3	0	0	0	0	0
EU	140	0	0	340,440	35	100	0	0	0
Chile	25,000	10	33.3	0	0	0	0	0	0
Japan	0	0	0	0	0	0	13	3	100
TOTAL	125,000	30	100	340,443	35	100	13	3	100

Pulses for seed (all types included in HS 0713)

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	60	0	0.0	981,754	483	44.6	880,203	271	41.6
MERCOSUL	81,000	58	34.1	3,100	1	0.1	0	0	0.0
Canada	212,200	46	27.1	1,213,620	465	42.9	1,029,801	329	50.5
EU	4,300	21	12.4	2,350	13	1.2	5,900	26	4.0
Australia	21,500	16	9.4	89,000	42	3.9	61,500	25	3.8
Other	12,000	29	17.1	95,581	79	7.3	0	0	0.0
TOTAL	331,060	170	100	2,385,405	1,083	100	1,977,404	651	100

* – percentage share of total imports based on value.

Major Grains for seed (Wheat-HS 1001.10.10, Corn-HS 1005.10, Rice-HS 1006.10.10)

	1997			1998			1999		
	kilo**	**US$ 1,000 FOB ******	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	43,114	645	6.8	4,016	14	1.5	42,250	52	10.8
MERCOSUL	44,096,020	8,856	93.2	1,462,013	859	96.1	884,947	429	89.2
Other	0	0	0.0	22,454	21	2.3	0	0	0
TOTAL	44,139,134	9,501	100	1,315,863	904	100	927,197	481	100

* – percentage share of total imports based on value.

** – Industry contact believe that the total1997 import statistics are overstated; the large numbers for imports of major grains from MERCOSUL could be partially responsible.

Minor Grains, for seed (Rye-HS 1002.00.10, Oats-HS 1004.00.10, Sorghum-HS 1007.00.10, Canary Seed-HS 1008.30.10; no imports in other minor grains)

	1997			1998			1999		
	kilo	US$ FOB	% *	kilo	US$ FOB	% *	kilo	US$ FOB	% *
U.S.	298,720	304	74.0	1,469,014	1,567	73.7	534,373	363	61.3
MERCOSUL	62,000	62	15.1	15,000	13	0.6	21,970	27	4.6
Canada	21,319	7	1.7	682,905	196	9.2	85,276	23	3.9
Australia	34,860	38	9.2	300,600	346	16.3	251,280	179	30.2
Other	0	0	0	15,100	5	0.2	0	0	0
TOTAL	416,899	411	100	2,482,619	2,127	100	892,899	592	100

* – percentage share of total imports based on value.

Soybeans for seed - HS 1201.00.10

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	40	0	0	0	0	--	0	0	0
MERCOSUL	0	0	0	0	0	--	84,520	26	6.3
Mexico	0	0	0	0	0	--	567,000	386	93.7
Bolivia	40,000	38	100	0	0	--	0	0	0
TOTAL	40,040	38	100	0	0	100	651,520	412	100

* – percentage share of total imports based on value.

Other Oilseeds for seed (Peanuts-HS 1202.20.10, Rape-HS 1205.00.10, Sunflowerseed-HS 1206.00.10, Palm nuts-HS 1207.10.10, Cottonseed-HS 1207.20.10, Caster beans-HS 1207.30.10, Mustard seed-HS 1207.50.10, Poppyseeds-HS 1207.91.10, Other-HS 1207.99.10)

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ FOB	% *
U.S.	67,609	157	21.7	2,803	11	1.6	2,967	8	0.6
MERCOSUL	115,995	154	21.1	40,052	130	0	117,353	390	30.1
Canada	0	0	0	0	0	0	75,200	488	37.7
Australia	0	0	0	100,000	240	37.7	25,200	74	5.7
Other	2,477	379	54.9	2,879	387	60.7	15,773	336	25.9
TOTAL	186,081	690	100	145,734	768	100	236,493	1,296	100

* – percentage share of total imports based on value.

Sugar Beet Seed - HS 1209.11.00

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	20,012	177	97.6	5,008	46	100	0	0	--
MERCOSUL	0	0	0.0	0	0	0.0	0	0	--
Other	1,240	4	2.4	0	0	0.0	0	0	--
TOTAL	21,252	181	100	5,008	46	100	0	0	100

* – percentage share of total imports based on value.

Beet seed, not sugar - HS 1209.19.00

	1997			1998			1999		
	kilo	**US$ FOB**	**% ***	**kilo**	**US$ FOB**	**% ***	**kilo**	**US$ FOB**	**% ***
U.S.	51,435	451	76.3	75,155	645	89.7	83,138	775	97.0
MERCOSUL	0	0	0	0	0	0	0	0	0
EU	13,982	98	16.6	4,736	29	4.0	3,053	20	2.5
Other	10,021	42	7.1	11,682	45	6.3	3	4	0.5
TOTAL	75,438	591	100	91,573	719	100	86,194	799	100

* – percentage share of total imports based on value.

Forage Seed (Alfalfa-HS 1209.21.00, Clover-HS 1209.22.00, Fescue-HS 1209.23.00, Kentucky Bluegrass-HS 1209.24.00, Ryegrass-HS 1209.25.00, Other-HS 1209.29.00)

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	9,277	26	3.9	48,712	202	19.7	4,500	18	4.8
MERCOSUL	67,300	265	40.0	197,899	432	42.2	84,706	180	48.4
Chile	46,528	199	30.1	28,000	112	10.9	10,000	40	10.8
Australia	16,400	75	11.3	47,328	147	14.4	21,486	68	18.3
Other	21,203	97	14.7	28,034	131	12.8	8,000	56	15.1
TOTAL	160,708	662	100	349,973	1,024	100	128,692	372	100

* – percentage share of total imports based on value.

Seeds of Plants grown primarily for their Flowers -- HS 1209.30.00

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	11,895	145	20.4	11,459	119	25.4	228	481	40.3
MERCOSUL	13	43	6.1	48	244	31.2	17	105	8.8
EU	2,819	301	42.4	2,331	206	26.3	10,026	396	33.1
Japan	105	180	25.7	56	134	17.1	127	213	17.8
Other	58	40	5.6	0	0	0	3	0	0
TOTAL	14,890	710	100	13,894	782	100	10,401	1,195	100

* – percentage share of total imports based on value.

Vegetable Seeds – HS 1209.91.00

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	312,513	6,377	37.7	309,495	7,548	38.2	309,440	7,016	36.9
MERCOSUL	3,037	347	2.1	0	0	0	101	4	0
EU	201,374	2,559	15.1	281,852	3,522	17.8	248,242	3,428	18.0
Israel	215	2,121	12.5	1,546	3,517	17.8	1,889	4,034	21.2
Japan	40,221	3,219	19.0	42,274	3,218	16.3	32,459	2,535	13.3
Chile	71,761	1,558	9.2	48,633	1,243	6.3	95,228	1,423	7.5
Australia	1,000	1	0	15,880	17	0.1	27,930	44	0.2
Other	71,062	742	4.4	20,492	674	3.4	23,889	590	3.1
TOTAL	701,183	16,923	100	720,172	19,738	100	739,178	19,032	100

* – percentage share of total imports based on value.

Other Seed, other than vegetable seed – HS 1209.99.00

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	37,910	450	41.3	37,267	1,114	50.6	37,943	474	22.5
MERCOSUL	3	21	1.9	0	0	0	0	0	0
EU	12,090	329	30.2	14,431	823	37.4	21,218	1,152	54.8
Australia	31,988	105	9.6	342	39	1.8	70	6	0.3
Other	12,437	182	16.7	863	224	10.2	16,513	471	22.4
TOTAL	94,428	1,089	100	52,903	2,200	100	75,744	2,102	100

* – percentage share of total imports based on value.

Brazilian EXPORTS of Seeds

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
Seed Potatoes	45,000	43	0	0	0	0	0	0	0
Onion, Shallot, Garlic Sets	198	0	0	100	0	0	88	0	0
Pulses for Seed	14,469,197	2,465	1.3	5,371,171	769	1.3	27,586	80	0.2
Wheat, Corn, Rice Seed	8,888,414	10,564	5.5	7,235,315	11,930	19.6	6,092,367	6,986	14.7
Other Grain Seed	114,039	116	0.1	688,800	353	0.6	634,440	356	0.7
Soybean Seed	551,928,547	166,269	86.1	98,132,575	28,808	47.4	118,478,387	23,404	49.2
Other Oilseed Seed	72,787	154	0.1	65,630	121	0.2	408,423	425	0.9
Beet Seed (not Sugar)	28	0	0	0	0	0	207	4	0
Forage Seed	3,058,008	12,361	6.4	4,256,310	17,056	28.1	4,117,150	13,144	27.6
Seeds of Flowering Plants	89	12	0	577	9	0	100	19	0
Vegetable Seeds	208,325	722	0.4	183,556	1,044	1.7	175,906	1,499	3.2
Other Seed	31,513	453	0.2	23,780	708	1.2	274,476	1,645	3.5
TOTAL	**578,816,145**	**193,159**	**100**	**115,957,814**	**60,798**	**100**	**130,309,130**	**47,562**	**100**

* – percentage share of total imports based on value.

Seed Potatoes - HS 0701.10.10

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	0	0	0	0	0	0	0	0	0
MERCOSUL	0	0	0	0	0	0	0	0	0
Angola	45,000	43	100	0	0	0	0	0	0
TOTAL	45,000	43	100	0	0	100	0	0	100

* – percentage share of total imports based on value.

Onion sets-HS 0703.10.11, Shallot sets-HS 0703.10.21, Garlic for planting-HS 0703.20.10

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	0	0	0	0	0	0	0	0	0
MERCOSUL	0	0	0	0	0	0	0	0	0
EU	0	0	0	0	0	0	88	0	0
Cape Verde	198	0	0	100	0	0	0	0	0
TOTAL	198	0	100	100	0	100	88	0	100

* – percentage share of total imports based on value.

Pulses for seed - all types included in HS 0713

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	0	0	0	0	0	0	16	0	0
MERCOSUL	1,262	2	0.1	1,036	2	0.3	6,370	5	6.3
Rest of L. America & Caribbean	0	0	0	19,285	24	3.1	12,400	29	36.3
EU	11,336,260	1,295	52.5	4,799,728	557	72.4	0	0	0
Africa	3,076,755	1,031	41.8	551,122	186	24.2	800	2	2.5
Other	54,920	137	5.6	0	0	0	8,000	44	55.0
TOTAL	14,469,197	2,465	100	5,371,171	769	100	27,586	80	100

* – percentage share of total imports based on value.

Major Grains for seed (wheat-HS 1001.10.10 and HS 1001.90.10, corn-HS 1005.10.00, rice-HS 1006.10.10)

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	1,134,961	1,818	17.2	1,972,803	5,477	45.9	369,789	372	5.3
MERCOSUL	5,606,368	6,557	62.1	4,554,096	5,349	44.8	4,844,908	5,220	74.7
Rest of L. America & Caribbean	798,940	1,133	10.7	650,910	1,034	8.7	847,609	1,364	19.5
Africa	1,322,160	1,011	9.6	5,030	5	0	100	0	0
Other	25,985	45	0.4	52,476	65	0.5	30,461	30	0.4
TOTAL	8,888,414	10,564	100	7,235,315	11,930	100	6,092,367	6,986	100

* – percentage share of total imports based on value.

Minor Grains for seed (Oats-HS 1004.00.10, Sorghum-HS-1007.00.10, Millet-HS 1008.20.10, Canaryseed-HS 1008.30.10)

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	0	0	0.0	700	4	1.1	0	0	0
MERCOSUL	87,099	51	44.0	625,000	206	58.4	540,000	165	46.3
Rest of L. America and Caribbean	26,940	65	56.0	63,100	143	40.5	94,440	191	53.7
Other	0	0	0.0	0	0	0.0	0	0	0
TOTAL	114,039	116	100	688,800	353	100	634,440	356	100

* – percentage share of total imports based on value.

Soybeans for seed - HS 1201.00.10

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	0	0	0	36,000	18	0.1	0	0	0
MERCOSUL	9,289,650	4,102	2.5	29,713,290	12,246	42.5	9,445,260	2,564	11.0
Rest of L. America and Caribbean	1,941,700	1,002	0.6	1,745,210	820	2.8	489,200	221	0.9
EU	440,392,205	131,839	79.3	46,261,955	10,718	37.2	108,503,547	20,594	88.0
Other	95,407,960	29,326	17.6	20,376,120	5,007	17.4	40,380	25	0.1
TOTAL	551,928,547	166,269	100	98,132,575	28,808	100	118,478,387	23,404	100

* – percentage share of total imports based on value.

Other Oilseeds for seed - Peanuts-HS 1202.20.10, Sunflower seeds-HS 1206.00.10, Cotton seed-HS 1207.20.10, Other-HS 1207.99.10

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	0	0	0	0	0	0	0	0	0
MERCOSUL	18,712	33	21.4	41,370	78	64.5	324,690	299	70.4
Rest of L. America & Caribbean	0	0	0	23,460	43	35.5	19,500	24	5.6
EU	4,075	21	13.6	0	0	0	64,233	102	24.0
Other	50,000	100	64.9	800	0	0	0	0	0
TOTAL	72,787	154	100	65,630	121	100	408,423	425	100

* – percentage share of total imports based on value.

Beet seed, not sugar - HS 1209.19.00

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	0	0	0	0	0	0	0	0	0
MERCOSUL	20	0	0	0	0	0	201	4	100
Rest of L. America & Caribbean	8	3	100	0	0	0	0	0	0
Africa	0	0	0	0	0	0	6	0	0
TOTAL	28	0	100	0	0	100	207	4	100

* – percentage share of total imports based on value.

Forage seed - Alfalfa-HS 1209.21.00, Clover-HS 1209.22.00, Kentucky bluegrass-HS 1209.24.00, Rye grass-HS 1209.25.00, Timothy grass-HS 1209.26.00, Other grass seed-HS 1209.29.00

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	630	5	0	14,360	79	0.5	11,350	39	0.3
MERCOSUL	261,085	478	3.9	292,664	739	4.3	417,780	620	4.7
Rest of L. America &Caribbean	2,784,478	11,841	95.8	3,939,086	16,224	95.1	3,675,020	12,460	94.8
Africa	11,815	37	0.3	0	0	0	2,500	13	0.1
Other	0	0	0	10,200	14	0.1	10,500	12	0.1
TOTAL	3,058,008	12,361	100	4,256,310	17,056	100	4,117,150	13,144	100

* – percentage share of total imports based on value.

Seeds of Plants grown primarily for their Flowers - HS 1209.30.00

	1997			1998			1999		
	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *	kilo	US$ 1,000 FOB	% *
U.S.	0	0	0	0	0	0	0	0	0
MERCOSUL	4	9	75.0	0	5	55.6	100	19	100
Rest of L. America &Caribbean	10	1	8.3	3	0	0	0	0	0
Other	32	2	16.7	574	4	44.4	0	0	0
TOTAL	89	12	100	577	9	100	100	19	100

* – percentage share of total imports based on value.

Vegetable seed - HS 1209.91.00

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	10,059	206	28.5	14,998	263	25.2	23,893	385	25.7
MERCOSUL	2,235	137	19.0	3,107	160	15.3	5,850	280	18.7
Rest of L. America & Caribbean	38,320	219	30.3	11,652	320	30.7	10,618	511	34.1
EU	156,723	140	19.4	150,510	264	25.3	116,621	130	8.7
Other	988	18	2.5	3,289	36	3.4	18,924	193	12.9
TOTAL	208,325	722	100	183,556	1,044	100	175,906	1,499	100

* – percentage share of total imports based on value.

Other Seed, other than vegetable seeds - HS 1209.99.00

	1997			1998			1999		
	kilo	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***	**kilo**	**US$ 1,000 FOB**	**% ***
U.S.	42	22	4.9	175	82	11.6	636	541	32.9
MERCOSUL	1,100	6	1.3	1,340	54	7.6	157,918	164	10.0
Rest of L. America & Caribbean	366	187	41.3	2,455	299	42.2	70,313	632	38.4
EU	29,065	197	43.5	19,427	221	31.2	33,357	198	12.0
Other	940	41	9.1	380	51	7.2	12,252	109	6.6
TOTAL	31,513	453	100	23,780	708	100	274,476	1,645	100

* – percentage share of total imports based on value.