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Ukraine

Planting Seeds

Ukraine: a Promising Market for U.S. Planting Seeds 2005

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Report Highlights:

Ukraine's market provides rewarding opportunities for U.S. corn, sunflower seed, non-GM soybeans, sorghum, tomatoes, onions, carrots, cabbage, sweet corn, watermelon and other planting seeds. The sharp appreciation of the Euro relative to the dollar and the need to improve the assortment of crops offered to Ukrainian farmers increase the competitive advantage of U.S. suppliers. This report provides information on the Ukrainian seed market and market entry requirements.

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Executive Summary

Ukraine's market for imported planting seeds was estimated at \$55 million in marketing year 2003-2004 (MY 2003/2004) with U.S. origin seeds capturing a 9% market share. Most likely, imports will continue to increase in MY 2004/2005. Opportunities are good for increased seed exports from the United States due to similar climates and relatively good transferability of plant varieties. The appreciation of the Euro has negatively impacted the competitiveness of European suppliers at a time when Ukrainian seed distributors need to improve the assortment of products offered to both commercial farmers and small private households. The later is especially true for vegetable and sweet corn seeds. While Ukraine's variety registration and seed import procedures are complicated, most experienced distributors in Ukraine can meet the requirements in a timely manner in preparation for the planting season. Some opportunities also exist for importing seeds, multiplication and reexport from Ukraine to Russia and other Former Soviet Union (FSU) countries due to relatively inexpensive land rent and labor.

Production

Assuming normal weather conditions, commercial seed production in Ukraine is expected to increase in MY 2004/2005, compared with the previous two marketing years. Production will be driven mostly by increased demand for high-quality corn, wheat, barley, sunflower and soybean seeds. Domestic production of wheat, barley and other winter grain seeds is expected to recover from 2003, the year Ukraine experienced an extremely low grain crop as a result of unprecedented winterkill and dry weather conditions during spring 2003. Crop farmers will likely continue to use more commercial plant genetics and reduce the use of seeds produced on-farms in order to improve yields.

Ukraine produces roughly 4 million MT of various species of planting seeds every year. Production of original and elite-quality seeds remains predominantly under state control and is conducted by agricultural research institutes and their experiment stations. Annually, the Government of Ukraine (GOU) spends approximately \$20-30 million through the Ministry of Agricultural Policy and the Ukrainian Academy of Agricultural Sciences (UAAS) to support domestic seed research and production. There are approximately 32 institutes and 125 experiment farms under the auspices of the UAAS and the Ministry that predominantly produce seeds of cereals, forages, oilseeds, sugar beets, potatoes and fiber crops. According to the estimates of the UAAS, it produces 90% of elite-quality seeds in Ukraine. 220 elite seed farms and 1,500 specialized seed farms that conduct further multiplication and commercial sale to farmers have been privatized. There are approximately 1,200 farms involved in hybrid corn seed production and 1,000 farms producing seeds of perennial grasses.

Ukrainian cereal and oilseed seed production estimates are difficult to obtain since farmers often use third to fifth generation of their own seeds for planting next year. Considering insignificant volumes of trade in cereal and oilseed seeds (refer to Appendices A and J for Import and Export data), estimates provided in the Consumption Section closely reflect domestic seed production of wheat, barley, corn, rye, oats, buckwheat, millet, peas, rice, sunflower, soybeans and rapeseed.

In 1995-2000, the World Bank provided a \$32 million loan to improve the regulatory environment and to support production of corn, sunflower and sugar beet seeds in Ukraine. The project succeeded and allowed Ukraine to maintain and expand export markets for these seeds. Vegetable seed production, however, remains underdeveloped in Ukraine and is mostly concentrated in small farms.

There is no information on production of flower or other types of plantings seeds in Ukraine. The State Statistics Committee of Ukraine gathers seed production statistics only for the following crops:

Production of Certain Types of Seeds in Ukraine in 2002 and 2003

	2002		2003	
Seed type	Area Harvested, hectares	Production, MT	Area Harvested, hectares	Production, MT
Sugar Beet Seeds	9,250	8,000	5,840	3,960
Annual Vegetable Crops for Seeds	3,140	1,580	3,440	1,100
Bi-annual Vegetable Crops for Seeds	370	130	140	80
Onions for Sowing	430	1,130	400	1,970
Melons, Watermelons and Gourds	1,210	150	940	50
Fodder Beets	1,400	900	600	270
Annual Grasses for Seeds (excl. Vetch)	10,200	4,730	18,400	10,760
- including sugan grass	3,900	1,660	9,700	5,920
Perennial Grasses for Seeds -	92,800	22,400	60,700	12,400
Including: Clover	22,300	2,320	13,300	1,440
Alfalfa	22,900	3,580	17,500	1,940
Sainfoin	30,600	14,180	20,100	7,980
Meadow and Pasture Grasses	16,400	2,230	9,300	940
- Including cereal-type grasses	14,600	1,960	8,400	820

Data Source: State Statistics Committee of Ukraine.

Consumption

The market for planting seeds in Ukraine is segmented by seed and farm type. There are two major categories of seed consumers in Ukraine: professional farmers (who usually have more than 40 hectares of arable land) and owners of small private household plots and dachas. The first category of farmers specialize in production of cereals and pulses (78% of area planted), sunflower seed (80%) and sugar beets (76%). Private household plots account for 87% of the area planted with vegetables and 99% with potatoes. The following table contains the estimated seed usage of major cereals, pulses and oilseeds for sowing by all types of farms.

Cereals and Oilseeds Seed Consumption

	2002		20	003	2004	
	Area planted		Area planted		Area planted	Estimated
	(all types of			Estimated seed		
		Estimated seed*		usage, 1,000	farms), 1,000	
	ha	usage, 1,000 MT	ha	MT	ha	1,000 MT
Wheat, all	7126	1430	7260	1450	6033	1210
Barley, all	4531	910	5828	1170	4727	950
Corn	1311	100	2170	110	2450	110
Rye	789	140	681	120	867	160
Oats	557	100	602	110	538	100
Buckwheat	433	39	366	36	427	38
Millet	164	5	311	9	418	13
Peas	356	90	403	100	272	70
Rice	19	4	22	5	21	5
Sunflower seed	2834	14	4001	20	3800	19
Soybeans	108	13	209	25	272	33
Rapeseed	81	1	69	3	175	2

Seed from the previous years used to plant the area indicated

Source: APK-Inform

There are nearly seven million private households located in rural areas that account for the planted area of cereals (22%), pulses (20%) and sunflower seed and sugar beets (24%). They rarely procure commercial seeds and usually keep a portion of their own crop for planting next year, or produce their own sugar beet seeds. Private household plot farmers and dacha owners; however, buy approximately 50% of vegetable seeds every year from distributors of local and imported seeds, and produce the remaining 50% themselves. The share of commercial vegetable seeds sold in Ukraine is increasing as the local distribution system develops and vegetable seed imports increase every year.

Seed Trade

Ukraine is a net importer of planting seeds. Imports of planting seeds in MY 2003/2004 skyrocketed mostly as a result of significant increase in demand for corn, soft wheat, sunflower seed and vegetable seed. It is expected that seed imports will continue to increase in MY 2004/2005 mostly as a result of growing demand for corn, sunflower seed and vegetable seeds. Exports of seeds from Ukraine appear to be stable with vegetable, sugar beet seeds, corn and sunflower seeds leading the way.

\$60,000 \$55,492 \$50,000 \$40,000 \$27,926 \$30,000 \$18,369 \$18,231 \$20,000 \$10,000 \$0 **Imports** Exports Imports **Exports** July 2002-June 2003 July 2003-June 2004

Ukraine's Seed Trade, \$1,000

Prepared by FAS Kiev based on Ukraine's official trade statistics for all planting seeds.

Imports

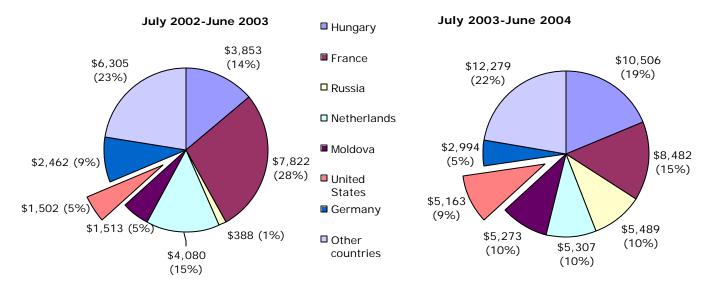
In MY 2004/2005, import of wheat for sowing is expected to decrease due to the recovery of domestic production from the disastrous crop in 2003. This decrease, however, will likely be offset by higher imports of corn, sunflower seed, soybeans and other field crops.

Imports of vegetable seeds are expected to increase in MY 2004/2005 as a response to the larger area planted compared with previous years and to reflect both higher demand for commercially available seeds and the need to improve the assortment offered to household farmers and dacha owners. The data on import quantity and value for major species of field crop seeds, forage and turf seeds, legumes and vegetables is provided in Appendix A.

U.S. seed exporters are well positioned to continue increasing their presence in the Ukrainian market. Import market share of U.S. planting seeds increased from 5% in MY 2002/2003 to 9% in MY 2004/2005 (see the graph below). Sharp appreciation of the Euro relative to the US dollar has negatively impacted the competitive position of France, Netherlands, Germany and other traditional seed suppliers from the Euro zone. According to information obtained

from seed importers, the European suppliers have not lowered prices to compensate for the appreciation of the Euro. The Ukrainian currency (hryvnya) is unofficially pegged to the U.S dollar, which increases the attractiveness of imports form the United States as compared with European suppliers despite higher transportation costs.

Seeds Import Market: Shares by Major Suppliers



Prepared by FAS Kiev based on Ukraine's official trade statistics for all planting seeds.

According to Ukrainian import statistics, the United States was the third largest supplier of corn and sunflower seeds and the largest supplier of sorghum and sweet corn seeds in MY 2003/2004. Please refer to Appendices B-H for country specific import data for corn, sunflower, soybean, sorghum, sugar beets, vegetables and sweet corn seeds imported into Ukraine. Please note that information provided in the appendices is based on seeds' country of origin; therefore, trade matrices provided in this report differ from U.S. export statistics because they account for trade in U.S. seeds transshipped via European distribution centers.

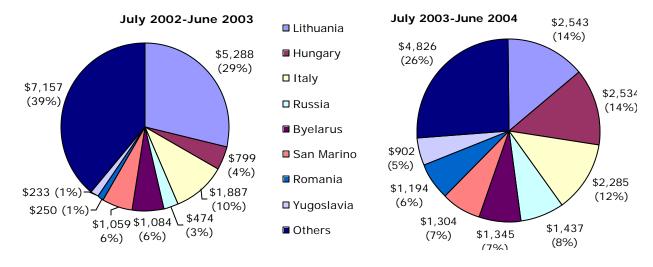
Most seeds for sowing are imported into Ukraine duty free. Sugar beet seeds face the highest import tariffs -- EUR 22 per 1 kilogram. The high import duty is a direct result of the powerful domestic industry-lobby group. Information on Ukrainian import duties that are applied to 27 types of seeds are found in Appendix I. If any seed is not listed in Appendix I, please contact FAS-Kiev at agkiev@usda.gov. Import duties are not applicable to products imported from Former Soviet Union countries because of free trade agreements. This explains the leading role of Moldova as the major sugar beet seed supplier to Ukraine (Appendix N).

Exports

Ukraine was a major planting seeds producer in the Former Soviet Union due to its fertile soil and predominantly dry weather. Following the break up of the Soviet Union in 1991, seed exports decreased due to the loss of traditional markets. Since then, exporters have found new markets. Currently, Ukraine exports seeds to Lithuania (sugar beets), Hungary (sugar beets and vegetables), Italy (tomatoes), Russian Federation (corn, sunflower seed), and Belarus (corn). Due to the low cost of production and the long tradition in producing forage grass seeds, Ukrainian exporters are successful in selling vetch and clover seeds to the

European Union (EU). Export information for various types of planting seeds in MY 2002/2003 and MY 2003/2004 is provided in Appendix J. Country-specific data for seed corn, sunflower seed, vetch, sugar beets and vegetable exports are provided in Appendices K-O.

Major Export Destinations for Plantings Seeds from Ukraine



Prepared by FAS Kiev based on Ukraine's official trade statistics for all planting seeds

Stocks

There is no publicly available information on seed stocks in Ukraine. As with seed consumption, stock distribution depends on seed and farm types. Most crop farmers produce and store seeds on farms. Farms that average 40 hectares or greater usually maintain a certain percentage of their own crop to serve as seed insurance stock in case of a bad crop or crop failure. Research facilities keep the stocks of original and elite-quality seeds. The Government of Ukraine maintains the State Seed Reserve Fund to assure the supply of the most important species in case of crop failure. According to publicly available information, funding was provided to purchase 10,260 MT of wheat, 9,230 MT of barley, 100 MT of sunflower seed and 2,000 MT of seeds for each of the following crops: peas, buckwheat and corn, in calendar year 2004. The stocks of vegetable seeds are usually limited to those stored by small private farmers, and pipeline stocks of importers.

Best Perspectives for U.S. Seed Exporters and Market Entry Patterns

Although adaptability of U.S. plant varieties in Ukraine is generally high, exporters must consider predominant weather conditions for various locations within Ukraine prior to making export decisions. Precipitation levels increase from 300-400 millimeters per year in southern Ukraine to 500-600 millimeters in northern Ukraine. The duration of the vegetation period with average daily temperatures above +10 °C is 170 days in Northern Ukraine and 185 days in southern Ukraine. The sum of active temperatures above +10 °C increases from 2400-2600 °C in the north to 3200-3600 °C in the south. The lowest levels of photo-synthetically active radiation were registered in Ivano-Frankivsk and Sumy Oblasts (1590 M Joules per 1 sq. meter) while the highest levels were recorded in the Crimean Peninsula (2180 M Joules per 1 sq. meter). U.S. exporters of winter crops and perennial grasses should consider the ability of their varieties to survive winter. The average time period with temperatures at -20 °C is 5-9 days in January or February (1-3 days in Southern regions).

Corn Seed, Sunflower Seed, Sorghum Seed and non-GM Soybean Seed are best prospects for U.S. exports of field crops. Unfortunately, due to a prohibitive import duty on sugar beet seeds, import opportunities are limited. U.S. companies involved in the international corn and sunflower seed trade have already established a presence in Ukraine. These companies either market seeds directly to farmers or use exclusive sales agreements with Ukrainian companies that have nation-wide distribution networks. In the first case, the U.S. company is solely responsible for clearing the seeds through registration, gaining import approval (as outlined in the Import Procedures Section) and marketing. In the second case, the U.S. plant variety owners (or the exporter) is responsible and bears the cost of variety registration while the Ukrainian distributor is responsible for clearing the seeds through the remainder of the import process.

The market for turf and lawn grass seed is rapidly growing in Ukraine especially around large cities in residential or dacha areas. The main consumers are people who want to improve or create a lawn. Exporters should note that variety registration requirements do not apply to grass seed mixtures. Demand from football fields is limited due to only a few professional teams while the market for turf for golf courses is only at the development stage.

The Euro appreciation and the need to improve the assortment of vegetable seeds available to small farmers create very good opportunities for U.S. tomato, onion, cabbage, table beet, carrot watermelon and sweet corn varieties. Marketing of these seeds in Ukraine, however, requires a well-developed regional distribution network. Therefore, U.S. exporters are advised to sell through an experienced distributor. This will likely require financing or sharing the cost of variety registration (seed Import Procedures Section) and providing marketing, and if necessary, agronomic or other technical assistance.

Import Procedures

Ukraine's seed import procedures are quite complex, yet possible to accomplish in a timely manner if properly coordinated with the U.S. exporter and Ukrainian importer. Currently, various legislative acts, laws including the Laws on Seeds, Plant Quarantine, Protection of Plant Varieties, Sanitary and Epidemiological Well-being of the Ukrainian Population, regulate or affect seed imports. Seeds are allowed entry into Ukraine if the following provisions are met:

- 1. imported plant variety is listed in the State Register of Plant Varieties, or it is in the registration process, or it's imported for the first time for trials, research or display purposes;
- 2. the importer obtained an import permit from the Main State Phytosanitary Inspection Service of Ukraine for a defined quantity of the particular plant species;
- 3. seeds are accompanied by certificate of origin;
- 4. seeds are accompanied by the phytosanitary certificate issued by the Plant Health Organization of exporting country;
- 5. seeds are accompanied by a quality certificate;

The Ministry of Agricultural Policy of Ukraine may also issue a single time import permit for varieties that are not included in the State Register of Plant Varieties, although, no legal protection is guaranteed in this case. In addition to the above requirements, the State Sanitary and Epidemiological Service of Ukraine also requires testing of seeds treated with pesticides.

Variety evaluation, registration and release

According to various estimates, there are more than 1,000 varieties and hybrids of 124 agricultural crops commercially available in Ukraine. Prior to importing seeds for commercial release each plant variety should be registered in Ukraine. The registration process has two main goals – to protect the intellectual property of plant breeders and to assure farmers that the variety has all the features claimed by its developers. The State Service for Plant Varieties Rights Protection (SSPVRP), which belongs to the Ministry of Agricultural Policy of Ukraine, is responsible for the registration process, which may include field and laboratory testing and/or variety evaluation leading towards its entry into the State Register of Plant Varieties of Ukraine (the Register) depending on plant specie. Once the variety is listed in the Register, it may be freely marketed in Ukraine.

Intellectual Property Rights Protection

Ukraine has been a member of the International Union for the Protection of New Varieties of Plants (UPOV) since November 3, 1995 and has changed its legislation in line with UPOV guidelines. The country is currently a signatory party to the International Convention for the Protection of New Varieties of Plants (the Act of October 23, 1978) and provides protection to 23 species that are most important to Ukrainian agriculture: eggplant, ordinary (table) beets, sugar beets, melons, rye, watermelon, white cabbage, read cabbage, cauliflower, potatoes, corn, carrots, cucumber, sweet pepper, tomatoes, millet, soft wheat, hard wheat, rice, sunflower seed, soybeans, triticale and barley.

Variety owners of the above listed species may obtain a Ukrainian patent that will ensure their exclusive rights in the country or simply list the variety in the Register. The second option provides a high degree of intellectual property right protection and is usually preferred by companies that do not have their own distribution system. These companies use the services of their Ukrainian importers and/or distributors who maintain the variety in the Register. There is draft legislation pending review by the Ukrainian Parliament that will ratify the Convention Act of 1991. Ratification of the 1991 Act will provide legal protection to all varieties of all plant species.

Variety Approval and State Field Testing

The practice of mandatory testing of plant varieties for farming suitability in various locations in Ukraine remains from the Soviet era when the Government had to determine the best varieties before distributing seeds to farmers located in different soil and climatic zones. The best varieties were used as industry standards for the purpose of evaluating the performance and farming suitability of all subsequent varieties.

In 2004, the SSPVRP significantly reduced the burden of mandatory field testing prior to inclusion of the variety in the Register; however, in-country field testing for the purposes of evaluation and farming suitability is still required for 81 species (mostly cereals, perennial and annual grasses, pulses, oilseeds and potatoes). The complete list of species (in their Latin names) that must undergo field testing for farming suitability is provided in Appendix P.

U.S. seed exporters should note that field testing of vegetables, sweet corn and other seeds not mentioned in the Appendix P is not generally required since the United States is a member of the UPOV. A variety owner will have to provide a description of the variety in accordance with UPOV guidelines on the distinctness, uniformity and stability testing (DUS testing). The variety will have to undergo field testing if DUS test results are not provided, or are provided without taking into consideration SSPVRP standards.

The entire plant variety registration process may take up to three years and cost the applicant (U.S. variety owner, U.S. exporter or Ukrainian importer) as low as \$750 if a variety

has been registered in another UPOV-member country. If the results of the DUS test description are acceptable then the plant specie is not required to undergo in-country field trials. The upper limit charged for registration fees can reach \$10,000 if a variety requires mandatory field trials, does not perform well during the first two years of testing and must undergo a third year of field testing. Plant varieties that show consistently good performance usually receive a temporary registration after the second year and can be marketed to farmers. All seeds imported for field trials enter Ukraine duty-free under a single-time permit from the SSPVRP.

Fees charged by the SSPVRP for registration and entry into the Register also depend on the plant's genus and the specie. Total payment estimates required for patenting and/or entry of plant variety into the Register are provided in Appendix Q. There are annual fees for maintaining a patent or maintaining a variety in the Register. The patent fee is gradually increased from \$90 for the second year to \$600 for the tenth and every consecutive year. The maintenance fee for the Register increases from \$20 paid in the first through fifth year to \$300 per annum after the 16th year of registration.

Currently, the following U.S. varieties are included in the Register and may be marketed in Ukraine.

U.SOrigin Plant Varieties	Registered in Ukraine as of September 1	, 2004

Plant	Variety Name*	Year of Registration	Registration#	Applicant
Sugar Beets	Serenade	2001	97013008	Betaseed, Inc.
Sugar Beets	BTS 903 UA	2002	99013001	Betaseed, Inc.
Corn	DK 443	2000	97004037	Dekalb
Corn	DK 471	1997	94004090	Dekalb
Sunflower Seed	Sonrisa	1999	94017038	Cargill Enterprises, Inc.
Sunflower Seed	Printasol	2001	94017031	Cargill Enterprises, Inc.
Iris	Laim fiz	2001	86231015	Fred Gutwein & Sons
Watermelons	AU-Producer PVP	2004	01027008	Hollar Seeds

^{*} Variety names are provided as indicated in the State Register of Plant Varieties of Ukraine

Usually, a Ukrainian importer or distributor applies to the SSPVRP on behalf of the U.S. exporter or variety owner to receive the registration. The variety owner maintains all the rights and his/her name appears in the Register. To learn more about the application for plant variety, details on payments required for state registration, and to download a copy of the application form for registration of plant variety in Ukraine, please visit the SSPVRP web site at: http://www.sops.gov.ua/index.en.htm

Official Ukrainian statistics track imports of U.S. soybean, sorghum, vegetables and sweet corn (Appendices D, E, G and H) although no such U.S. plant varieties are registered in Ukraine (see table above). These cases could be explained by the fact that importers obtained import permits from the Ministry of Agricultural Policy of Ukraine without proceeding with state variety registration.

Plant Heath Regulations

Only the Ukrainian importers or representative offices of foreign companies in Ukraine may obtain a required import permit from the Main State Phytosanitary Inspection Service (MSPIS) of the Ministry of Agricultural Policy of Ukraine. The Permit contains information on species allowed for entry, defined quantity, list of pests, product-specific treatment requirements (including disinfection and/or disinfestation treatment, if required), entry points into Ukraine and post-entry inspection procedures. The permit must be received for each shipment.

When factoring delivery time from the United States to Ukraine, seed imports require a high degree of coordination between exporters and importers since phytosanitary import permits for commercial shipments are only valid for three months. It is highly advisable, especially for first-time exporters to Ukraine, to obtain a copy of the translated import permit from a Ukrainian importer prior to issuance of the U.S. Phytosanitary Certificate by USDA's Animal and Plant Health Inspection Service (APHIS). A copy of the import permit would enable an APHIS inspector to make statements that are required on the Ukrainian import permit. The list of quarantine pests and weeds that are of concern to the MSPIS in seed shipments is provided in Appendix R.

Ukrainian Phytosanitary inspectors will conduct an initial inspection of seeds at the port of entry and will take samples for laboratory testing to verify that quarantine pests are not present. If quarantined live pests are found at the port of entry, the product must either be fumigated again or refused entry. The local branch of the MSPQIS will conduct the secondary inspection of seeds at the point of destination in Ukraine to verify compliance with import conditions and to provide final clearance.

Seed certification

The State Seed Inspection Service (SSIS) of the Ministry of Agricultural Policy of Ukraine conducts testing of all imported and domestic seeds to certify compliance with existing quality standards. For imported seeds, certification is required prior to final customs clearance. The SSIS applies the same standards to imported and domestically produced seeds. The existing Ukrainian State Seed Standard establishes limits for variety purity (or hybrid uniformity), admixture of weed seeds and seeds of other plants, germination rate, germination energy, moisture as these indicators apply to the original, elite-quality and reproduction seeds for all major species.

Ukraine does not participate in the Organization for Economic Cooperation Seed Schemes designed to promote the use of seed of consistently high quality. The country is a member of the International Seed Testing Association (ISTA); however, there are no ISTA-accredited laboratories in Ukraine. The international certificates issued by ISTA-accredited laboratories are accepted by the SSIS and do expedite in-country certification process by eliminating the need to conduct all required tests upon product arrival. However, these certificates do not completely eliminate local testing and certification requirements.

Seed importers usually agree with the exporter whether it is feasible to obtain an ISTA certificate prior to shipping. Contract parties usually take into consideration the costs of obtaining an ISTA certificate as compared with the cost and time required to acquire certification in Ukraine. It usually takes seven days (cereals, pulses, oilseeds) to 30 days (perennial grasses) for the SSIS to certify seeds. The Customs Service will not release the shipment until the importer presents a valid quality certificate from the SSIS. The cost of certification depends on the number of samples and varies by plant specie. On average, testing of each sample costs \$22 and includes the following tests: purity, germination, moisture, pest infestation, determining the weight of 1,000 seeds, viability, authenticity and moisture. To learn more about seed certification procedures visit the SSIS web site at: http://agroua.net/ni/eng/zakon.php?menu=4

Seeds of Genetically Modified Plants

Currently, there is no legislation in place that clearly defines how products of biotechnology can be developed, traded or utilized within Ukraine. Furthermore, there is no official line of authority by agency for the regulation of biotechnology.

Five biotech varieties of potatoes, corn, rapeseed and sugar beets underwent field trials in 1997-2000 in Ukraine. To date, none has received final approval due to the lack of decision-making authority mandated by the legislation. There is a draft law (pending review by the Ukrainian parliament since November 2002) that divides responsibility for the development, testing, and registration of domestic and imported products of biotechnology among various government agencies. Adoption of this law will enable the regulatory process to commercialize plant biotechnology products in Ukraine.

Other import controls applicable to seeds

In addition to phytosanitary, variety testing and certification requirements mentioned above, each seed lot must be tested for compliance with existing radiological standards upon entry. If seeds were treated with pesticides, the State Sanitary Service will verify residue quantities and will issue a certificate with validity terms for up to three years.

Appendix A. Imports of Seeds into Ukraine in MY 2002/2003 and MY 2003/2004

Aggregate seed categories	Seeds	July 2002- June 2003, kg	July 2002- June 2003, \$1,000	July 2003- June 2004, kg	July 2003- June 2004. \$1,000	Change in import value in 03/04 from 02/03,%
Field Crop Seeds	Corn	5,897,891	\$9,030	11,852,000	\$21,816	142%
	Sunflower	1,136,440	\$6,387	1,555,465	\$9,036	41%
	Wheat, soft	4,010,060	\$632	25,217,789	\$5,632	791%
	Rapeseed	242,270	\$1,029	341,110	\$1,579	53%
	Barley	269,759	\$130	934,477	\$486	275%
	Sorghum hybrids	80,387	\$159	247,260	\$480	201%
	Flax	359,944	\$345	335,095	\$285	-17%
	Wheat, hard	100	\$0	313,750	\$204	_
	Soybean	87,476	\$62	49,379	\$67	8%
Field Crop Seeds Total		12,084,327	\$17,773	40,846,325	\$39,583	123%
Forage & Turf Seeds	Forage & Turf Grasses NES	147,636			\$455	
	Fescue	39,599			\$53	
	Rye grass	16,300	\$23	28,871	\$37	
	Clover	3,250	\$11	9,735	\$22	93%
	Bluegrass	6,825		· ·	\$16	
	Vetch	2,200	\$6	4,700	\$15	137%
	Timothy	400	\$0	5,920	\$4	2283%
	Alfalfa	800	\$1	0	\$0	
Forage & Turf Seeds Total		217,010	\$444	318,819	\$602	36%
Leguminous Vegetable Sees	Peas	268,913	\$179	821,406	\$600	235%
	Beans	10,555			\$14	-44%
Leguminous Vegetable Sees Tota	nl	279,468	\$203	826,142	\$614	202%
Other seeds	Sugar Beet	408,169	\$1,820	365,578	\$4,971	173%
	Beet, Not Sugar	451,221	\$1,180	541,891	\$1,529	30%
	Other Seeds	73,023	\$307	113,621	\$474	
	Mushroom Spawn	209,350	\$412	230,056	\$456	11%
	Seeds Of Herbaceous Plants Cultivated Principally For Their Flowers		\$251	1,995	\$140	-44%
Other seeds Total		1,144,769			\$7,570	
Other Vegetable Seeds	Other Vegetable Seeds (onion, parsley, pepper, broccoli, cabbage, carrot, radish, cucumber, etc)	240,592			\$6,857	
onici vegetable seeus	Sweet Corn for Sowing	19,947			\$0,837	
	Cauliflower	120	\$2	396	\$4	143%
Other vegetable seeds Total		260,659				
Grand Total Data Source: State Customs Serv				43,528,563	\$55,492	99%

Data Source: State Customs Service of Ukraine via the World Trade Atlas⁰
For specific HS codes descriptions under each of the following aggregate seed categories: field crops; forage & turf; leguminous vegetables; other vegetables and other seeds, please refer to http://www.fas.usda.gov/ustrade/ustlists/ExBICOCm.asp?QI=&type=2&code=43

Appendix B. Corn Imports into Ukraine (Ukrainian HS Code 100510)

Countries	July 2002-June 2003, kg	•	July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Hungary	2,371,490	3159.45	5,319,030	9,423
France	2,441,626	3649.64	2,482,030	4,697
United States	350,590	678.50	1,599,088	2,840
Yugoslavia	110,855	339.90	610,833	1,236
Austria	40,795	69.50	466,710	873
Canada	66,254	137.55	279,463	552
Germany	209,021	476.24	247,107	574
Slovak Republic	92,340	139.35	197,139	289
Chile	1,150	24.36	196,429	411
Romania	148,247	226.65	188,041	377
Others not listed	65,523	128	266,130	545
Total	5,897,891	9029.56	11,852,000	21,816

Data Source: State Customs Service of Ukraine via the World Trade Atlas⁰

Appendix C. Imports of Sunflower Seeds for Sowing into Ukraine (Ukrainian HS Code 1206001000)

Countries	July 2002-June 2003, kg	•	July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Turkey	146,597	565	554,878	2,332
France	423,780	2,699	239,770	2,020
United States	67,872	370	282,216	1,547
Yugoslavia	23,435	715	50,340	1,384
Hungary	98,020	346	155,524	738
Spain	172,112	936	37,234	304
Netherlands	C	0	56,200	280
Romania	83,210	277	64,397	199
Moldova	49,300	125	58,000	158
Italy	61,490	315	10,481	53
Others	10,624	41	46,425	21
Total	1,136,440	6,387	1,555,465	9,036

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix D. Imports of Soybean Seeds for Sowing into Ukraine (Ukrainian HS 1201001000)

Countries		July 2002-June 2003, \$1,000		July 2003-June 2004. \$1,000
Canada	19,068	16.43	39,339	58
Yugoslavia	9,000	4.50	9,000	5
United States	20,140	9.88	1,040	4
France	39,268	31.02	0	0
Total	87,476	62	49,379	67

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix E. Imports of Sorghum Hybrids for Sowing into Ukraine (Ukrainian HS 1007001000)

	,	•	July 2003-June	,
Countries	2003, kg	2003, \$1,000	2004, kg	2004, \$1,000
United States	54,827	92.34	247,260	480
France	560	21.00	0	0
Spain	25,000	46.00	0	0
Total	80,387	159	247,260	480

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix F. Sugar Beet Seeds Imports into Ukraine (HS 120911)

Countries	July 2002-June 2003, kg	July 2002-June 2003, \$1,000	July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Moldova	147,420	1,383	353,151	4,928
Yugoslavia	0	0	100	15
Russia	700	7	2,244	15
Belgium	16,870	37	1,045	6
France	0	0	4,912	3
Denmark	0	0	210	2
Poland	0	0	3,882	1
Germany	241,263	391	34	C
Slovak Republic	1,916	3	0	C
United States	0	0	0	C
Total	408169	1820	365578	4971

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix G. Imports of Vegetable Seeds into Ukraine*

	July 2002-June	July 2002-June	July 2003-June	July 2003-June
Countries	2003, kg	2003, \$1,000	2004, kg	2004, \$1,000
Netherlands	71 087	3 613	78 893	4 413
Germany	45 673	312	82 853	629
France	30 660	499	15 772	505
Poland	27 087	333	38 810	407
Italy	8 019	152	8 675	244
Japan	15	17	187	154
Czech Republic	5 221	60	13 611	148
United States	6 697	133	3 697	113
Denmark	2 327	68	3 348	62
Hungary	251	10	4 836	62
Others	43 555	95	13 305	120
Total	240 592	5 291	263 987	6 857

^{*}Onion, parsley, pepper, broccoli, cabbage, carrot, radish, cucumber, and other vegetables under Ukrainian HS 1209919000

Data Source: State Customs Service of Ukraine via the World Trade Atlas®

Appendix H. Imports of sweet corn seeds for sowing (Ukrainian HS 0712901100)

	,	,	July 2003-June 2004, kg	July 2003-June 2004, \$1,000
United States	16 080	190	12 737	165
Netherlands	3 862	52	6 936	93
Japan	5	0	80	3
Total	19 947	243	19 753	261

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix I. Ukrainian Import Duties on Seeds

Seeds for sowing	Ukrainian HS code	Import duties, %, or EUR/kg
Sugar Beet	1209110000	€ 22.00
Beans	0713331000	€ 0.60
Sweet Corn for Sowing	0712901100	€ 0.60
Mushroom Spawn	0602901000	€ 0.20
Barley	1003001000	€ 0.02
Sorghum hybrids	1007001000	€ 0.02
Wheat, hard	1001100010	0%
Wheat, soft	1001909100	0%
Corn	1005100000	0%
Soybean	1201001000	0%
Sunflower	1206001000	0%
Flax	1204001000	0%
Rapeseed	1205001000	0%
Alfalfa	1209210000	0%
Clover	1209220000	0%
Fescue	1209230000	0%
Bluegrass	1209240000	0%
Rye grass	1209250000	0%
Timothy	1209260000	0%
Vetch	1209291000	0%
Forage & Turf Grasses NES	1209298000	0%
Peas	0713101000	0%
Beet Seeds, Not Sugar	1209190000	0%
Seeds Of Herbaceous Plants Cultivated Principally For Their Flowers	1209300000	0%
Other Seeds	1209999900	0%
Cauliflower	1209911000	0%
Other Vegetable Seeds (onion, parsley, pepper, broccoli, cabbage, carrot, radish, cucumber, etc)	1209919000	0%

Data Source: Law on "Custom Tariff of Ukraine" dated April 5, 2001 N 2371-III (2371-14) as of December 20, 2004

Appendix J. Seeds Exports from Ukraine in MY 2002/2003-MY 2003/2004

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TOTT OKTAINE III W	July 2002-	July 2002-	July 2003-	July 2003-	Change in export
Aggregate seed categories	Seed	June 2003, kg	June 2003, \$1,000	June 2004, kg		value in 03/04 from 02/03, %
Field Crop Seeds	Corn	3,712,966	\$1,492	5,696,547	\$2,486	67%
	Sunflower	112,190	\$167	501,358	\$1,233	639%
	Wheat, hard	15,860	\$4	921,000	\$368	8756%
	Soybean	50	\$0	403,010	\$237	-
	Barley	73,900	\$12	773,975	\$227	1793%
	Wheat, soft	2,678,361	\$498	67,124	\$30	-94%
	Flax	146,000	\$46	18,092	\$6	-87%
Field Crop Seeds Total		6,739,327	\$2,219	8,381,106	\$4,588	107%
Forage & Turf Seeds	Forage & Turf Grasses NES	1,091,259	\$336	1,176,487	\$439	31%
	Vetch	978,350	\$202	1,605,015	\$415	106%
	Clover	0	\$0	154,300	\$110	_
	Lupin	20,570	\$4	54,900	\$29	563%
	Fescue	14,600	\$11	14,000	\$17	55%
	Alfalfa	106	\$0	6,285	\$15	_
	Rye grass	185,060	\$110	16,000	\$14	-88%
	Timothy	1,200		3,000	\$3	214%
Forage & Turf Seeds Total		2,291,145	\$664	3,029,987	\$1,043	57%
Leguminous Vegetable Sees	Peas	80,100	\$30	99,450	\$55	83%
Leguminous Vegetable Sees Tota		80,100	\$30	99,450	\$55	83%
Other seeds	Sugar Beet Seed	942,365	\$9,569	269,498	\$4,485	-53%
	Other Seeds	96,532	\$123	285,952	\$276	124%
	Mushroom Spawn	4,992	\$3	11,984	\$17	430%
	Beet Seeds, Not Sugar	6,232	\$13	2,008	\$9	-30%
	Seeds Of Herbaceous Plants Cultivated Principally For Their					
	Flowers	10	\$2	90	\$2	13%
Other seeds Total		1,050,131	\$9,711	569,532	\$4,790	-51%
	Vegetable Seeds (onion, parsley, pepper, broccoli, cabbage, carrot, radish,					
Other vegetable seeds	cucumber, etc)	4,475,502	\$5,606	7,086,401	\$7,894	41%
Other vegetable seeds Total		4,475,502	\$5,606	7,086,401	\$7,894	41%
Grand Total		14,636,205	\$18,231	19,166,476	\$18,369	1%

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o
For specific HS codes descriptions under each of the following aggregate seed categories: field crops; forage & turf; leguminous vegetables; other vegetables and other seeds, please refer to http://www.fas.usda.gov/ustrade/ustlists/ExBICOCm.asp?QI=&type=2&code=43

Appendix K. Seed Corn Exports from Ukraine (Ukrainian HS Code 100510)

Countries			July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Byelarus	1 646 782	1 009	1 817 000	1 291
Russia	1 354 984	364	1 199 049	563
Romania	C	0	2 228 425	287
Yugoslavia	C	0	297 073	165
Lithuania	45 000	41	95 000	140
Latvia	20 000	13	60 000	40
Others	646 200	65	0	0
Total	3 712 966	1 492	5 696 547	2 486

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix L. Exports of Sunflower Seeds for Sowing from Ukraine (Ukrainian HS Code 1206001000)

Countries			July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Yugoslavia	100 000	158	366 223	524
Russia	0	0	120 135	674
Moldova	11 490	4	15 000	36
Kazakhstan	0	0	C	0
Uzbekistan	700	4	C	0
Total	112 190	167	501 358	1 233

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix M. Exports of Vetch Seeds from Ukraine

Countries	J	J	July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Netherlands	0	0	479 700	149
Austria	192 250	37	337 200	68
Yugoslavia	43 722	19	323 000	87
Poland	106 000	15	208 000	32
Slovakia	20 000	3	86 000	23
Italy	119 000	34	60 000	16
Russia	250 750	47	58 180	11
Germany	0	0	26 200	24
Others	246 628	47	26 735	6
Total	978 350	202	1 605 015	415

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix N. Sugar Beet Seed Exports from Ukraine (HS 120911)

Countries			July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Lithuania	490 300	5 191	130 599	2 348
Hungary	0	0	32 793	1 476
Romania	0	0	94 291	549
Kazakhstan	5 000	31	11 815	113
Germany	47 910	82	0	0
Latvia	351 150	2 893	0	0
Moldova	18 000	22	0	0
Poland	30 005	1 350	0	0
Total	942 365	9 569	269 498	4 485

Data Source: State Customs Service of Ukraine via the World Trade Atlas^o

Appendix O. Exports of Vegetable Seeds from Ukraine*

Countries	3	J	July 2003-June 2004, kg	July 2003-June 2004, \$1,000
Italy	1 292 675	1 692	1 580 004	2 032
San Marino	741 485	1 006	968 997	1 225
Hungary	582 790	768	771 100	1 015
Turkey	102 000	84	563 123	493
Germany	276 225	359	491 783	707
Romania	186 305	250	419 000	294
Syria	232 000	153	393 000	255
Lebanon	8 500	10	312 400	238
Spain	343 500	450	272 080	402
Others	710 022	834	1 314 914	1 233
Total	4 475 502	5 606	7 086 401	7 894

^{*}Onion, parsley, pepper, broccoli, cabbage, carrot, radish, cucumber, and other vegetables under Ukrainian HS 1209919000

Data Source: State Customs Service of Ukraine via the World Trade $Atlas^{\$}$

Appendix P. Species that are subject to mandatory state testing for farming suitability in Ukraine

suitability in Ukraine		
#Latin Name	#	Latin Name
1 Vicia faba L.	43	Malva crispa (L.) L.
2 Brassica napus L. var. napobrassica (L.) Rchb.	44	Malva meluca Graebn.
3 Melilotus alba Medik.	45	Malva L.
4 Melilotus officinalis Lam.	46	Agrostis gigantea Roth.
5 Beta vulgaris L. ssp. vulgaris Var. alba DC	47	Avena sativa L.
6 Beta vulgaris L. ssp. vulgaris var. altissima Doell		Phalaroides arundinacea (L.) Rausch.
7 Vicia L.	49	Lolium multiflorum var. W?st?rw?ldi?um Mansh.
8???hi? scoparia (L.) Schrad.	50	Lolium multiflorum Lam.
9 Sinapis alba L.	51	Lolium perenne L.
10 Brassica juncea (L.) Czern. et Coss. in Czern.	52	Echinochloa frumentacea (Roxb.) Link
11 Pisum sativum L. sensu lato	53	Agropyron Gaertn.
12 Pisum arvense L.	54	?ani?um miliaceum L.
13 Fagopyrum esculentum Moench.	55	?riti?um aestivum L.
14 Dactylis glomerata L.	56	?riti?um durum Desf.
Onobrychis Mill.	57	Arrhenatherum elatius (L.) ? .Beauv. ?? J. S et ?. ? Presl
16 Agropyron Gaertn.	58	Oryza sativa L.
₁₇ Secale cereale L.	59	Brassica napus L.
18 Brassica subspontanea Lizg.	60	Bunias orientalis L.
19 Solanum tuberosum L.	61	Ornithopus sativus Brot.
20 Phaseolus vulgaris L.	62	Silphium perfoliatum L.
21 Galega officinalis L.	63	Sida hermaphrodita Rusby
22 Galega orientalis L.	64	Helianthus annuus L.
23 Trifolium aperturn Bobr.	65	S?rghum bicolor (L.) Moench
24 Trifolium hybridum L.	66	S?rghum sudanense (Piper.) Stapf.
Trifolium pratense L.	67	S?rghum vulgare Pers. ? SorghUffi sudanense (Piper) Stapf.
26 Trifolium alexandrinum L.	68	Glycine m??. (L.) Merr.
27 Trifolium repens L.	69	Bromus inermis Leyss.
28 Festuca pratensis Huds.	70	Bromopsis erecta (Huds.) Fourr.
29 Festuca ovina L.	71	?hleum pratense L.
Festuca arundinacea Schreb.	72	Brassica rapa ? Brassica compestris var. Olifera bienins
31 Festuca rubra L.	73	??? pratensis L.
32 Zea mays L.		Helianthus tuberosus L.
33 Lavatera thuringiaca L.		S?rghum almum Parodi.
34 Alopecurus pratensis L.		? Triticosecale Wittmack
35 Linum usitatissimum L. s. stricta		Phacelia tanacetifolia Benth.
36 Lupinus albus L.		Lathyrus silvestris L.
37 Lupinus angustifolius L. 38 Lupinus luteus L.	79	Rumex tianscnanicus ?. Los. Amaranthus L.
39 Medicago sativa L.	81	Hordeum vulgare L. sensu lato
40 Medicago Iupulina L.		
41 Lotus comiculatus L. 42 Malva pulchella Bernh. ? Malva crispa L.		
TZIMAIVA PUICHENA DELINI. ! MAIVA CHSPA L.		<u> </u>

Source: Order #159 of the Ministry of Agricultural Policy of Ukraine dated May 14, 2004

Appendix Q. Estimates of the lump sum payments required to register a plant variety in Ukraine from non-residents, US\$

	Genus and	Species of the Plar	nts	
Type of Registration	I (Agricultural Crops)*	II (Vegetables and Ornamental	III (Others)*	
	Crops)	Crops)*	(Others)	
Issuing a patent for a variety which				
is subject to state testing for	2480	2180	1880	
farming suitability				
Entry of plant variety which is				
subject to state testing for farming	4580	3980	3380	
suitability into the State Register of	4300	3700	3300	
Plan Varieties of Ukraine				
Issuing a patent and entry into the				
State Register of Plant Varieties of				
Ukraine of a variety which is	4640	4040	3440	
subject to state testing for farming				
suitability				
State testing and entry into the				
State Register of Plant varieties	790			
that are NOT subject to mandatory	170			
state testing				

Prepared by Post based on the Resolution of the Cabinet of Ministers of Ukraine # 1183 dated August 19, 2002 (as amended).

*Group I. Agricultural crops.

Cotton (Gossypium L.), Sugar Beets (Beta vulgaris L. ssp. vulgaris var. altissima Doell), Fodder Beets (Beta vulgaris L. ssp. vulgaris var. alba DC), Peas (Pisum sativum L. sensu lato), Rye (Secale cereale L.), Canary Grass (Phalaris canariensis L.), Potatoes (Solanum tuberosum L.), Beans (Phaseolus vulgaris L.), Corn (Zea mays L.), Oats (Avena sativa L.), Soft Wheat (Triticum aestivum L.), Hard Wheat (Triticum durum Desf.), Rice (Oryza sativa L.), Rapessed (Brassica napus L.), Sunflower Seed (Helianthus annuus L.), Sorghum (Sorghum vulgare Pers.), Sorhum-sudan grass hybrids (Sorghum vulgare Pers. x Sorghum sudanense (Piper) Stapf.), Soybeans (Glycine max. (L.) Merr.), Sudan Grass (Sorghum sudanense (Piper.).), Stapf.), Triticale (Triticosecale Wittmack), Barley (Hordeum vulgare L. sensu lato).

Group II. Agricultural crops, including cereal and pulse grasses not mentioned in Group I.

Vegetables:

Eggplant (Solanum melongena L.), Broad Beens (Vicia faba L. partim), Common Beets (Beta vulgaris L. ssp. vulgaris var. conditiva Alef.), Pumpkin (Cucurbita pepo L.), Pea (Pisum sativum L. partim), Mellon (Cucumis melo L.), Squash (Cucurbita pepo L. var. montia Duch.), Watermelon (Citrullus lanatus (Thunb.) Matsum. et Nakai), White Cabbage (Brassica oleraceae L. convar. capitata (L.) Alef. var. alba DC.), Beans (Phaseolus vulgaris L. partim), Carrot (Daucus carota L.), Cucumber (Cucumis sativus L.), Pepper (Carsicum spec.), Tomato (Lycopersicon esculentum Mill.), Radish (Raphanus sativus L.), Letuce (Lactuca sativa L.), Onions (Allium cepa L.), Chicory (Cichorium intybus L.);

Ornamental Crops:

Azalea (Azalea indica L.), Alstroemeria (Alstroemeria L.), Laceleaf (Anthurium Schott),

Touch-me-not (Impatiens L.), Begonia (Begonia-Elatior-Hybriden), Carnation (Dianthus caryophyllus L.), Gerbers (Gerbera L.), Chandelier plant (Kalanchoe Adans,), Lily (Lilium L.), Poinsettia (Euphorbia pulcherrima Wild. Ex Klotzsch), Orchid (Orhidaceae), Geranium (Pelargonium L'Her.), Pentas (Pentas Benth.), Petunia (Petunia x hybrida Vilm.), Saintpualia (Saintpualia H. Wendl.), Spathiphyllum (Spathiphyllum Schott), Rose (Roza L.), Fuchsia (Fuchsia L.), Daisy (Chrysanthemum L.).

Group III. Genus and species of the plants not mentioned in Groups I and II.

Appendix R. Quarantine Pests That Should Not Be Present in Seeds Imported From the United States to Ukraine.

All seeds	Seed Potatoes
Trogoderma granarium ?v.	Synchytrium endobioticum
Paralipsa gularis Zell.	Globodera pallida
Tomato spotted wilt virus	Globodera rostochiensis
Beet necrotic yellow vein furovirus	Premnotrypes sp.sp.
Mycosphaerella linorum	Phthorimaea operculella Zell.
Diabrotica barberi Smth et Lawrence	?h?m? andina
Diabrotica undecimpunctata howardi Barber	Phoma exigua Desmazieres var.
Diabrotica virgifera le Conte	Phymatotrichum omnivorum
Stenocarpella macrospora	Thecaphora solani
Erwinia stewartii	Ralstonia solanacearum
Maize dwarf mosaic virus	Andean potato latent virus
Tilletia indica	Potato yellow dwarf virus
Corynebacterium tritici	Potato vein-yellowing virus
Heterodera glycines Ichinohe	
Phytophtora megasperma	
Cercospora kikuchii	
Xanthomonas campestris	
Xanthomonas campestris	

Weeds

weeds
Ambrosia psilostachya D.C.
Ambrosia trifida L.
Bidens bipinnata L.
Bidens pilosa L.
Diodia terres Walt.
Euphorbia dentata Minch.
Helianthus califomicus D.C. :
Helianthus ciliaris D.C.
Iva axillaris P?rsh
Polygonum pensylvanicum L.
Raimania laciniata Rose.
Sida spinosa L.
Solanum elaeagnifolium ???
Solanum carolinense L.
Solanum triflorum Nutt
Striga sp.sp.
Ypomea hederaseae L. Jacg.
Ypomea lacunosa L.
Acroptilon repens L.
Ambrosia artemisiifolia L.
Cenchrus pauciflorus
Cuscuta sp.sp.
Solanum rostratum Dunal.
Sorghum halepense L. Pers