

Tracking U.S. Grain and Soybean Exports in Mexico

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Executive Summary

Tracking U.S. Grain and Soybean Exports in Mexico

U.S. grain and soybean exports to Mexico averaged 16 million tons from 2001-2005, more than double the amounts of the early 1990s. Due partly to NAFTA, this trade growth has spurred interest in how these products are moved throughout Mexico and how they are used. This study reports the destination, mode of transportation and end uses of U.S. grains and soybeans within the Mexican market.

Corn dominates U.S. grain and soybean export volumes Mexico, accounting for 37 percent in 2005. Soybeans accounted for 22 percent, followed by wheat and grain sorghum (18 percent each), and rice, (5 percent). Soybean dominates export values to Mexico with 34 percent during 2005, followed by corn (28 percent), wheat (19 percent), sorghum (13 percent), and rice (7 percent).

Of the 5.4 million metric tons (mmt) of U.S. corn used in Mexico in 2004, 54 percent was animal feed, 37 percent corn starch, and rest for flour, cereals and snack foods. U.S. corn went to 24 destinations in Mexico. Sonora was number one (14 percent), followed by Jalisco (12 percent), Durango (11 percent), Vera Cruz (10 percent) and Puebla (8 percent). Rail shipment data received accounted for 63 percent of U.S. corn export in Mexico. Major rail destinations were Queretaro, 1.14 mmt, San Luis Potosi, 691.6 thousand metric tons (tmt), Mexico, 609.7 tmt, Nuevo Leon, 355.0 tmt, and Jalisco, 303.5 tmt. Nuevo Laredo and Veracruz were major points of origin for corn.

Grain sorghum is used only for animal feed in Mexico. Twenty percent of U.S. sorghum was shipped to Puebla in 2004. Other major markets were Yucatan (19 percent), Jalisco (19 percent), Veracruz (10 percent), and San Luis Potosi and Nuevo Leon (six percent each). Data received show at least 22 percent of U.S. sorghum is transported by rail within Mexico. The majority of U.S. sorghum is transported by truck within Mexico. Nuevo Laredo is a major point of origin for rail shipments of sorghum.

U.S. wheat exported to Mexico is used almost entirely for human consumption. About half of the wheat is shipped by rail. Of this total, about 80 percent is shipped to the state of Mexico, the Federal District and Nuevo Leon. Other markets are Jalisco, Puebla, Coahuila and Guanajuato. Nuevo Laredo is the primary point of origin.

About 90 percent of all U.S. rice exports to Mexico are in rough form and will be milled in Mexico for human consumption. All rice moves by truck within Mexico. Veracruz accounts for about 40 percent of the rice market, followed by the state of Mexico, Nuevo Leon, Guanajuato and the Federal District.

All U.S. soybeans exported to Mexico are crushed for meal and oil. Most crushing occurs in Yucatan, Nuevo Leon, Jalisco, the Federal District, Guanajuato and Veracruz. Rail is also important mode of transportation for U.S. soybeans in Mexico with data received showing at least one third were transported via this mode. Guanajuato, Nuevo Leon, Hidalgo, Tamaulipas and Jalisco account for 97 percent of soybean shipments by rail. Nuevo Laredo, Altamira, Veracruz and Matamoros are the major points of origin.

Prospects to develop and implement an ongoing reporting system to track grain and soybean shipments are limited by inability to acquire full information, long time lags between shipment and reporting and unwillingness of many market participants to provide data on commodity movements.

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Introduction

The United States and Mexico have long been important trading partners. With the implementation of the North American Free Trade Agreement in 1994, the relationship originally built as a result of geographic proximity, was able to greatly expand. Nowhere is the trading relationship between the nations more visible than in the export of U.S. grains and soybeans to Mexico. Each year from 2001 to 2005, U.S. grain and soybean exports to Mexico averaged 16.0 million metric tons and \$2.4 billion. Corn dominates U.S. grain and soybean export volumes Mexico, accounting for 37 percent in 2005 (Figure 1). Soybeans accounted for 22 percent, followed by wheat and grain sorghum (18 percent each), and rice, (5 percent). Soybean dominates export values to Mexico with 34 percent during 2005, followed by corn (28 percent), wheat (19 percent), sorghum (13 percent), and rice (7 percent).

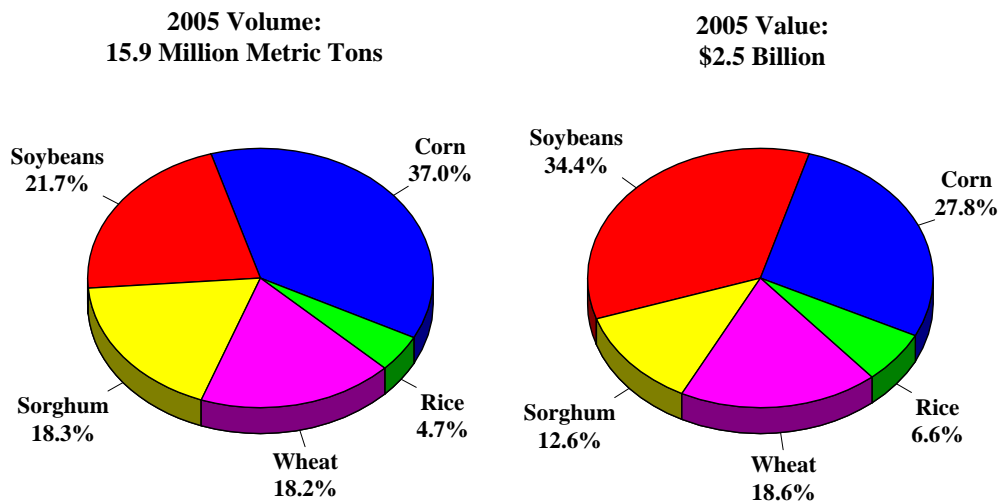
While much is known about the uses of U.S. grains and soybeans, much less is known about how these commodities are used in Mexico, modes of transportation, and final market destinations.

This project has three main objectives:

1. Describe the market destination of U.S. grain and soybean exports to Mexico by mode of transportation;
2. Describe the end use of these exports by product and final consumption such as animal feeding and human consumption; and
3. Assess the capability to design and implement an electronic quarterly reporting system to reflect the transportation, destination, and end use of U.S. grains and soybeans in Mexico.

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Figure 1. Composition of U.S. Grain and Soybean Exports to Mexico, 2005



Source: U.S. Trade Internet System, www.fas.usda.gov/ustrade

Government agencies, private sector firms, and agricultural organizations in both Mexico and United States were contacted to collect statistics to accomplish objectives 1 and 2. In Mexico, the statistics division of their agricultural ministry, *Servicio de Información y Estadística Agroalimentaria y Pesquera* of *Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación* (SIAP/SAGARPA), proved to be a valuable source of information. Data were requested from U.S. grain and soybean export organizations, Mexican users of grain and soybeans and their respective trade associations, leading rail transportation providers in Mexico. Some organizations participated at various levels in the project and some did not. The following is a description of the information collected and analyzed.

U.S. Corn Exports to Mexico

The United States exported 5.68 million metric tons (mmt) of corn to Mexico during 2005, up from 5.44 mmt in 2004 (SAGARPA). During 2004, the latest year for which Mexican usage data were available, 2.94 mmt of U.S. corn exported to Mexico (54.1 percent) was used in animal feeding, 1.99 mmt processed into corn starch (36.5 percent), 348.3 thousand metric tons (tmt) used for flour (6.4 percent), 108.8 tmt for cereals (2.0 percent), and 54.4 tmt for snack foods (1.0 percent) (Table 1).

Table 1. Uses of U.S. Corn Exports to Mexico, 2004

Uses	MT	Percentage
Animal feeding	2,944,122	54.10%
Corn Starch	1,986,330	36.50%
Flour	348,288	6.40%
Cereals	108,840	2.00%
Snacks	54,420	1.00%
Total	5,442,000	100.00%

*Source: Servicio de información y estadística agroalimentaria y pesquera (SIAP),
Secretaría de agricultura, ganadería, desarrollo rural, pesca y alimentación (SAGARPA)*

For corn used for animal feed, Sonora was the main destination for 400.7 tmt, accounting for 13.6 percent of U.S. corn used as feed in Mexico (Table 2). Other major destinations were Jalisco at 366.0 tmt (12.4 percent), Durango with 327.6 tmt (11.1 percent), Veracruz at 283.2 tmt (9.6 percent), and Puebla with 241.9 tmt (8.2 percent). In all, 24 Mexican states and the Federal District were destinations for U.S. corn used in animal feeding.

Table 2. Destinations for U.S. Corn Used as Feed in Mexico, 2004

States	MT	Percentage
Sonora	400,687	13.6%
Jalisco	366,043	12.4%
Durango	327,624	11.1%
Veracruz	283,170	9.6%
Puebla	241,899	8.2%
Querétaro	227,006	7.7%
Yucatán	210,860	7.2%
San Luis Potosí	190,413	6.5%
Nuevo León	171,725	5.8%
Mexico	155,052	5.3%
Chihuahua	94,972	3.2%
Aguascalientes	48,824	1.7%
Chiapas	34,018	1.2%
Sinaloa	33,822	1.1%
Guanajuato	29,474	1.0%
Tlaxcala	28,380	1.0%
Baja California	25,719	0.9%
Morelos	23,328	0.8%
Federal District	13,628	0.5%
Guerrero	13,333	0.5%
Hidalgo	6,727	0.2%
Tabasco	6,028	0.2%
Michoacán	4,919	0.2%
Tamaulipas	4,340	0.1%
Coahuila	2,129	0.1%
Total	2,944,122	100.0%

*Source: Servicio de información y estadística agroalimentaria y pesquera (SIAP),
Secretaría de agricultura, ganadería, desarrollo rural, pesca y alimentación (SAGARPA)
Note: Sum of the individual numbers may not equal total due to rounding*

Three Mexican states accounted for U.S. corn processed into corn starch. Jalisco was the destination for 1.0 mmt (50.4 percent of starch use), Querétaro accounted for 616.7 tmt (31.0 percent), and Mexico for 367.9 tmt (18.5 percent) (Table 3).

Table 3. Destinations for U.S. Corn Used in Corn Starch and Snack Foods in Mexico, 2004

States	Corn Starch		States	Snack Foods	
	Metric Tons	Percentage		Metric Tons	Percentage
Jalisco	1,001,697	50.4%	Coahuila	19,244	35.4%
Querétaro	616,739	31.0%	Veracruz	16,909	31.1%
Mexico	367,894	18.5%	Mexico	10,675	19.6%
			Durango	5,392	9.9%
			Querétaro	2,200	4.0%
TOTAL	1,986,330	100.%	Total	54,420	100.0%

*Source: Servicio de información y estadística agroalimentaria y pesquera (SIAP),
Secretaría de agricultura, ganadería, desarrollo rural, pesca y alimentación (SAGARPA)*

The results were similar for U.S. corn used in Mexican snack foods with five states serving as destinations. The leading state for snack foods was Coahuila with 19.2 tmt (35.4 percent), followed by Veracruz with 16.9 tmt (31.1 percent), Mexico with 10.7 tmt (19.6 percent), Durango at 5.4 tmt (9.9 percent), and Querétaro with 2.2 tmt (4.0 percent) (Table 3). Destination data were not available for U.S. corn used as flour or cereal manufacturing.

The primary rail transportation providers in Mexico were contacted in an effort to collect shipment data for U.S. grains and soybeans moving within Mexico. Acquired data accounted for about 63 percent, or 3.44 mmt, of U.S. corn exports to Mexico in 2004 (Table 4). The major destinations for U.S. corn transported by rail in Mexico were Queretaro at 1.14 mmt, San Luis Potosi with 691.6 tmt, Mexico at 609.7 tmt, Nuevo Leon with 355.0 tmt, and Jalisco at 303.5 tmt (Table 5).

Table 4. Railway Transportation for U.S. Corn Exported to Mexico, 2004

Origin	Destination	Metric Tons
Nuevo Laredo	Queretaro	832,410
Nuevo Laredo	San Luis Potosi	672,570
Veracruz	Mexico	392,040
Nuevo Laredo	Nuevo Leon	286,110
Veracruz	Jalisco	240,570
Veracruz	Querétaro	218,790
Nuevo Laredo	México	216,180
Matamoros	Tamaulipas	74,520
Matamoros	Queretaro	70,110
Matamoros	Nuevo Leon	68,850
Matamoros	Coahuila	62,280
Nuevo Laredo	Aguascalientes	58,950
Nuevo Laredo	Jalisco	38,610
Matamoros	Aguascalientes	31,950
Veracruz	Veracruz	29,970
Nuevo Laredo	Coahuila	25,560
Altamira	Queretaro	22,770
Altamira	Jalisco	20,700
Matamoros	San Luis Potosi	15,570
Lazaro Cardenas	Veracruz	14,490
Matamoros	Federal District	6,930
Nuevo Laredo	Federal District	6,840
Nuevo Laredo	Michoacan	6,750
Matamoros	Guanajuato	6,210
Nuevo Laredo	Guanajuato	4,950
Nuevo Laredo	Durango	4,500
Matamoros	Jalisco	3,600
Altamira	San Luis Potosi	3,420
Lazaro Cardenas	Puebla	3,150
Nuevo Laredo	Puebla	1,170
Other	Other	2,790
Corn Shipped by Rail within Mexico during 2004		3,443,310
Total Corn Shipped by U.S. to Mexico during 2004		5,442,000

Source: Mexican Railway Industry Representatives

Table 5. Destinations for U.S. Corn Exports to Mexico Shipped by Rail, 2004 and 2005

2004		2005	
Destination	Metric Tons	Destination	Metric Tons
Queretaro	1,144,080	Queretaro	1,420,380
San Luis Potosi	691,560	San Luis Potosi	854,730
Mexico	609,660	Mexico	573,390
Nuevo León	354,960	Nuevo León	340,110
Jalisco	303,480	Aguascalientes	74,700
Aguascalientes	90,900	Jalisco	71,550
Coahuila	87,840	Tamaulipas	57,060
Tamaulipas	74,520	Coahuila	45,900
Veracruz	44,820	Veracruz	28,710
Federal District	13,770	Federal District	12,690
Guanajuato	11,970	Guanajuato	12,420
Michoacan	6,750	Michoacan	5,760
Durango	4,500	Puebla	900
Puebla	4,410	Tlaxcala	360
Tlaxcala	90	Hidalgo	90
Total	3,443,310	Total	3,498,750

Source: Mexican Railway Industry Representatives

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he leading city-to-state pairs were Nuevo Laredo to Queretaro with 832.4 tmt, followed by Nuevo Laredo to San Luis Potosi with 672.6 tmt, Veracruz to Mexico at 392.0 tmt, Nuevo Laredo to Nuevo Leon with 286.1 tmt, Veracruz to Jalisco with 240.6 tmt, Veracruz to Queretaro at 218.8 tmt and Nuevo Laredo to Mexico at 216.2 tmt.

Please note the cities of origin shown in tables 4, 6, 9, 10, 13, 14, 17 and 18 for commodity movements within Mexico. Nuevo Laredo and Matamoros are land ports while Veracruz, Lazaro Cardenas, and Altamira are sea ports. There are other Mexican land ports through which grains are transported, most notably Juarez; however, no rail transportation data

were received for shipments originating in Juarez or other land ports west of Laredo. Further, while shipments to Mexico via water are important, once in Mexico the commodities were shipped either by rail or truck.

The destination data reported by SAGARPA are at times different than the destination totals in the rail transportation data. There are several possible explanations for this, first and foremost being that rail transportation data accounts for only 63 percent of total shipments. In instances where the rail data showed no shipments to numerous states to which SAGARPA reported shipments, the reason is that not all rail companies participated in the project and these areas are served by the nonparticipating firms.

There are also several instances in which the shipments of U.S. corn to a particular Mexican state reported by SAGARPA are lower than the amount indicated by rail data. The most extreme example of this is the rail data indicating 691.6 tmt to San Luis Potosi while SAGARPA indicates only 190.4 tmt of U.S. corn, a 500 tmt difference. The other leading examples of this are the destinations of Nuevo Leon with 183 tmt more reported than SAGARPA, Coahuila with 83 tmt more, Queretaro with 81 tmt more, Mexico with 78 tmt more, and Tamaulipas with 70 tmt more. One possible explanation for this is that corn could be moving beyond the point of major rail carrier destination either by short-lines or by truck.

Rail transportation data for 2005 were collected; however, there are no state destination data from SAGARPA with which to compare these data. During 2005, rail shipment data are available for 3.50 mmt of U.S. corn within Mexico, accounting for 62 percent of shipments. The top ten city-to-state pairs were Nuevo Laredo to Queretaro, with 989.8 tmt, followed by Nuevo Laredo to San Luis Potosi with 729.1 tmt, Veracruz to Queretaro with 349.5 tmt, Nuevo Laredo to Nuevo Leon at 289.1 tmt, Veracruz to Mexico at 282.2 tmt, and Nuevo Laredo to Mexico with

273.5 tmt (Table 6) (Figure 2). The 2005 ranking destinations for U.S. corn were Queretaro with 1.42 mmt, San Luis Potosi with 854.7 tmt, Mexico at 573.4 tmt, Nuevo Leon at 340.1 tmt, and Aguascalientes with 74.7 tmt (Table 5). The only difference in order was that Aguascalientes replaced Jalisco as the fifth leading destination; however, this is due to Jalisco declining from 303.5 tmt to 71.6 tmt because Aguascalientes also fell slightly from the 2004 total of 90.9 tmt.

Figure 2. Top Ten Routes for U.S. Corn Exports in Mexico, 2005



Table 6. Railway Transportation for U.S. Corn Exported to Mexico, 2005

Origin	Destination	Metric Tons
Nuevo Laredo	Queretaro	989,820
Nuevo Laredo	San Luis Potosi	729,090
Veracruz	Queretaro	349,470
Nuevo Laredo	Nuevo Leon	289,080
Veracruz	México	282,240
Nuevo Laredo	México	273,510
Matamoros	San Luis Potosí	121,050
Nuevo Laredo	Aguascalientes	56,250
Matamoros	Tamaulipas	54,270
Matamoros	Nuevo Leon	51,030
Matamoros	Queretaro	50,130
Matamoros	Coahuila	45,000
Nuevo Laredo	Jalisco	36,540
Veracruz	Jalisco	32,760
Veracruz	Veracruz	28,530
Veracruz	Queretaro	27,360
Matamoros	Aguascalientes	18,450
Nuevo Laredo	Mexico	13,770
Nuevo Laredo	Guanajuato	8,280
Matamoros	Federal District	6,750
Nuevo Laredo	Federal District	5,940
Nuevo Laredo	Michoacan	5,760
Altamira	San Luis Potosi	4,590
Matamoros	Mexico	3,870
Veracruz	Guanajuato	3,690
Altamira	Queretaro	3,600
Nuevo Laredo	Tamaulipas	2,790
Matamoros	Jalisco	2,250
Nuevo Laredo	Puebla	900
Nuevo Laredo	Coahuila	900
Matamoros	Guanajuato	450
Other	Other	630
Corn Shipped by Rail within Mexico during 2005		3,498,750
Total Corn Shipped by U.S. to Mexico during 2005		5,683,800

Source: Mexican Railway Industry Representatives

U.S. Sorghum Exports to Mexico

The United States exported 3.02 mmt of sorghum to Mexico during 2005, down slightly from 3.16 mmt in 2004 (SAGARPA). Sorghum is used exclusively to feed animals in Mexico. The top destination for U.S. sorghum exports to Mexico was Puebla, accounting for 637.3 tmt of shipments, or 20.2 percent (Table 7). Other leading destinations were Yucatan with 608.8 tmt,

Table 7. Destinations for U.S. Sorghum Exports to Mexico, 2004

States	Metric Tons	Percentage
Puebla	637,300	20.2%
Yucatán	608,815	19.3%
Jalisco	596,821	18.9%
Veracruz	329,590	10.4%
San Luis Potosí	213,788	6.8%
Nuevo León	202,448	6.4%
Durango	124,212	3.9%
Guanajuato	105,161	3.3%
Sinaloa	90,885	2.9%
Sonora	70,912	2.2%
México	51,752	1.6%
Aguascalientes	37,513	1.2%
Chihuahua	28,732	0.9%
Baja California	15,735	0.5%
Tamaulipas	11,296	0.4%
Chiapas	10,592	0.3%
Querétaro	9,140	0.3%
Tlaxcala	7,490	0.2%
Morelos	4,161	0.1%
Hidalgo	1,883	0.1%
Tabasco	1,075	0.0%
Total	3,159,300	100.0%

*Source: Servicio de información y estadística agroalimentaria y pesquera (SIAP),
Secretaría de agricultura, ganadería, desarrollo rural, pesca y alimentación (SAGARPA)*

Note: Sum of the individual numbers may not equal total due to rounding

followed by Jalisco at 596.8 tmt, Veracruz with 329.6 tmt, San Luis Potosi at 213.8 tmt, and Nuevo Leon with 202.4 tmt. Together, these six destinations accounted for nearly seventy percent of U.S. sorghum exports to Mexico.

The rail transportation data collected accounted for 720.5 tmt of U.S. sorghum exports to Mexico during 2004 and 677.8 tmt in 2005, or about 22.5 percent of these shipments for each year (Table 8). The major destinations for U.S. sorghum transported by rail in Mexico for 2004 were San Luis Potosi at 216.0 tmt, Guanajuato with 123.1 tmt, Veracruz with 84.7 tmt, Mexico with 77.0 tmt, Jalisco at 75.9 tmt, and Nuevo Leon with 29.9 tmt. During 2005, leading destinations were Nuevo Leon at 141.4 tmt, Veracruz with 138.4 tmt, Mexico with 108.7 tmt, Jalisco with 97.5 tmt, Guanajuato with 63.9 tmt, and San Luis Potosi with 62.8 tmt. While the

Table 8. Destinations for U.S. Sorghum Exports to Mexico Shipped by Rail, 2004 and 2005

2004		2005	
Destination	Metric Tons	Destination	Metric Tons
San Luis Potosi	216,000	Nuevo Leon	141,390
Guanajuato	123,120	Veracruz	138,420
Veracruz	84,690	Mexico	108,720
Mexico	77,040	Jalisco	97,470
Jalisco	75,870	Guanajuato	63,900
Nuevo Leon	67,860	San Luis Potosi	62,820
Durango	29,880	Durango	25,830
Aguascalientes	16,920	Federal District	15,840
Queretaro	7,740	Queretaro	9,180
Michoacan	6,030	Nayarit	7,290
Nayarit	4,860	Aguascalientes	6,930
Federal District	4,500		
Puebla	4,140		
Hidalgo	1,890		
Total	720,540	Total	677,790

Source: Mexican Railway Industry Representatives

same six states are represented in both years, they are significantly different in ranking. No explanation is offered for the difference in ranking, however, it may be due simply to the relatively low percentage of total shipments that the rail shipment data represent.

Just as with corn, there are some differences in the 2004 sorghum shipment data as reported by SAGARPA when compared to the rail transportation data. The main reasons for this are, again, the reported rail transportation data accounts for only 22.5 percent of total shipments because not all rail companies participated in the project. There is only one instance in which shipments of U.S. sorghum to a particular Mexican state, in this case Mexico, reported by SAGARPA are lower than the amount reported by rail data. One possible explanation for this discrepancy is that sorghum could be moving beyond the point of major rail carrier destination either by short-line or by truck.

The leading city-to-state pairs for U.S. sorghum rail shipments to Mexico during 2004 were Nuevo Laredo to San Luis Potosi with 172.8 tmt, followed by Matamoros to Guanajuato with 93.8 tmt, Veracruz to other destinations in Veracruz at 138.4 tmt, Nuevo Laredo to Mexico with 72.5 tmt, and Matamoros to Nuevo Leon at 54.9 tmt (Table 9). The leading city-to-state pair for 2005 was Veracruz to other destinations in Veracruz at 84.7 tmt, followed by Nuevo Laredo to several states, including Nuevo Leon at 132.0 tmt, Mexico at 105.5 tmt, Jalisco at 74.6 tmt, and San Luis Potosi at 54.7 tmt, and Matamoros to Guanajuato at 50.9 tmt (Table 10) (Figure 3). When compared to 2004, the Nuevo Laredo-Nuevo Leon pair replaced Matamoros-Nuevo Leon as a top destination.

Table 9. Railway Transportation for U.S. Sorghum Exported to Mexico, 2004

Origin	Destination	Metric Tons
Nuevo Laredo	San Luis Potosi	172,800
Matamoros	Guanajuato	93,780
Veracruz	Veracruz	84,690
Nuevo Laredo	Mexico	72,540
Matamoros	Nuevo Leon	54,900
Nuevo Laredo	Jalisco	49,680
Matamoros	San Luis Potosi	43,200
Matamoros	Jalisco	26,190
Nuevo Laredo	Guanajuato	23,760
Matamoros	Durango	17,730
Nuevo Laredo	Aguascalientes	16,920
Nuevo Laredo	Nuevo Leon	12,960
Nuevo Laredo	Durango	12,150
Matamoros	Queretaro	7,740
Nuevo Laredo	Michoacan	6,030
Veracruz	Guanajuato	5,580
Nuevo Laredo	Nayarit	4,860
Matamoros	Pueblo	4,140
Matamoros	Federal District	4,050
Matamoros	Mexico	2,520
Veracruz	Mexico	1,980
Nuevo Laredo	Hidalgo	1,890
Nuevo Laredo	Federal District	450
Sorghum Shipped by Rail within Mexico during 2004		720,540
Total Sorghum Shipped by U.S. to Mexico during 2004		3,159,300

Source: Mexican Railway Industry Representatives

Table 10. Railway Transportation for U.S. Sorghum Exported to Mexico, 2005

Origin	Destination	Metric Tons
Veracruz	Veracruz	138,420
Nuevo Laredo	Nuevo Leon	132,030
Nuevo Laredo	Mexico	105,480
Nuevo Laredo	Jalisco	74,610
Nuevo Laredo	San Luis Potosi	54,720
Matamoros	Guanajuato	50,940
Matamoros	Jalisco	22,860
Nuevo Laredo	Durango	17,010
Nuevo Laredo	Guanajuato	12,960
Matamoros	Nuevo Leon	9,360
Nuevo Laredo	Federal District	8,910
Matamoros	Durango	8,820
Matamoros	San Luis Potosi	8,100
Nuevo Laredo	Nayarit	7,290
Nuevo Laredo	Queretaro	7,020
Nuevo Laredo	Aguascalientes	6,930
Matamoros	Federal District	6,930
Matamoros	Queretaro	2,160
Matamoros	Mexico	1,890
Veracruz	Mexico	1,350
Sorghum Shipped by Rail within Mexico during 2005		677,790
Total Sorghum Shipped by U.S. to Mexico during 2005		3,020,536

Source: Mexican Railway Industry Representatives

Figure 3. Top Ten Routes for U.S. Sorghum Exports in Mexico, 2005



U.S. Wheat Exports to Mexico

The United States exported 3.72 mmt of wheat to Mexico during 2005, up slightly from 3.59 mmt in 2004 (SAGARPA). U.S. wheat exports to Mexico are used almost exclusively for human consumption in Mexico with only about 7.2 tmt used for animal feed (Table 11). While the vast majority of U.S. wheat used for feed in Mexico was shipped to the states of Mexico and Jalisco, data were not available for the destinations of wheat for human consumption.

SAGARPA, Mexican wheat millers, and wheat associations in both Mexico and the United States were contacted in an effort to acquire these data, but none were able to provide the information.

Table 11. Uses of U.S. Wheat Exports to Mexico, 2004

Uses	Metric Tons	Percentage
Human Consumption	3,578,213	99.80%
Animal Feeding	7,171	0.20%
Total	3,585,384	100.00%

*Source: Servicio de información y estadística agroalimentaria y pesquera (SIAP),
Secretaría de agricultura, ganadería, desarrollo rural, pesca y alimentación (SAGARPA)*

The rail transportation data collected accounted for 1.84 mmt of U.S. wheat exports to Mexico during 2004 and 1.59 mmt in 2005, 51.3 percent and 42.7 percent, respectively, of the yearly totals (Table 12). The major destinations for U.S. wheat shipped transported by rail

Table 12. Destinations for U.S. Wheat Exports to Mexico Shipped by Rail, 2004 and 2005

2004		2005	
Destination	Metric Tons	Destination	Metric Tons
Mexico	687,510	Mexico	663,120
Federal District	445,590	Federal District	350,280
Nuevo Leon	340,830	Nuevo Leon	300,690
Jalisco	96,210	Jalisco	69,570
Guanajuato	72,720	Puebla	57,060
Puebla	62,010	Coahuila	45,990
Coahuila	60,480	Guanajuato	40,680
Michoacan	29,340	Queretaro	29,610
Queretaro	28,080	Michoacan	17,910
Aguascalientes	11,970	Aguascalientes	8,640
Durango	3,870	Durango	2,880
San Luis Potosi	3,150	San Luis Potosi	2,520
		Veracruz	1,980
Total	1,841,760	Total	1,590,930

Source: Mexican Railway Industry Representatives

within Mexico in 2004 were Mexico at 687.5 tmt, the Federal District with 445.6 tmt, and Nuevo Leon with 340.8 tmt. Together, these three destinations accounted for eighty percent of U.S. wheat rail shipments during 2004. For 2005, the top four destinations for U.S. wheat were the

same as in 2004 and the major destinations accounted for 1.31 mmt, or 83 percent of the total. The top three city-to-state pairs for U.S. wheat shipped by rail within Mexico during 2004 were from Nuevo Laredo. Shipments from there to Mexico were 528.3 tmt, to Nuevo Leon were 340.8 tmt, and to the Federal District were 291.7 tmt (Table 13) (Figure 3). Rail shipments of wheat from Veracruz to the Federal District were 125.3 tmt. The Nuevo Laredo to Mexico, Nuevo Leon, and the Federal District, respectively, were again the top three city-to-state pairs for rail shipments in 2005; however, Lazaro Cardenas to Mexico replaced Veracruz to the Federal District as the fourth leading destination (Table 14).

Table 13. Railway Transportation for U.S. Wheat Exported to Mexico, 2004

Origin	Destination	Metric Tons
Nuevo Laredo	Mexico	528,300
Nuevo Laredo	Nuevo Leon	340,830
Nuevo Laredo	Federal District	291,690
Veracruz	Federal District	125,280
Nuevo Laredo	Jalisco	81,270
Lazaro Cardenas	Mexico	71,640
Matamoros	Mexico	63,360
Nuevo Laredo	Coahuila	60,480
Nuevo Laredo	Pueblo	59,760
Nuevo Laredo	Guanajuato	49,680
Lazaro Cardenas	Federal District	28,620
Veracruz	Mexico	24,210
Veracruz	Guanajuato	20,700
Nuevo Laredo	Michoacan	17,640
Veracruz	Queretaro	13,590
Veracruz	Jalisco	13,500
Veracruz	Michoacan	11,700
Nuevo Laredo	Aguascalientes	9,540
Lazaro Cardenas	Queretaro	8,370
Nuevo Laredo	Queretaro	6,120
Other	Other	15,480
Wheat Shipped by Rail within Mexico during 2004		1,841,760
Total Wheat Shipped by U.S. to Mexico during 2004		3,585,384

Source: Mexican Railway Industry Representatives

Figure 4. Top Ten Routes for U.S. Wheat Exports in Mexico, 2005

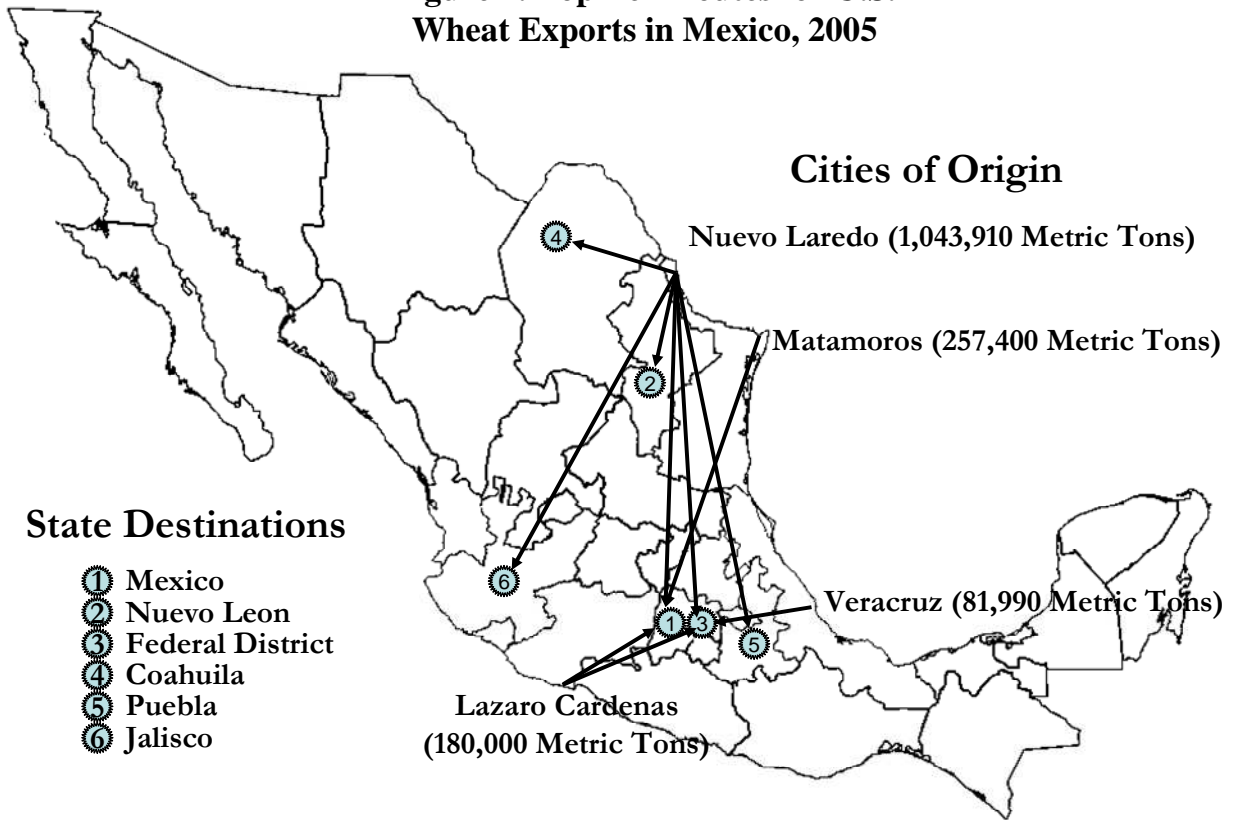


Table 14. Railway Transportation for U.S. Wheat Exported to Mexico, 2005

Origin	Destination	Metric Tons
Nuevo Laredo	Mexico	454,320
Nuevo Laredo	Nuevo Leon	282,780
Nuevo Laredo	Federal District	187,200
Lazaro Cardenas	Mexico	103,230
Veracruz	Federal District	81,990
Matamoros	Mexico	77,400
Lazaro Cardenas	Federal District	76,770
Nuevo Laredo	Coahuila	45,990
Nuevo Laredo	Pueblo	40,590
Nuevo Laredo	Jalisco	33,030
Veracruz	Jalisco	31,050
Nuevo Laredo	Guanajuato	30,870
Veracruz	Mexico	28,170
Matamoros	Nuevo Leon	16,920
Matamoros	Pueblo	16,470
Nuevo Laredo	Michoacan	15,570
Veracruz	Queretaro	14,850
Nuevo Laredo	Queretaro	8,100
Veracruz	Guanajuato	7,650
Nuevo Laredo	Aguascalientes	6,390
Lazaro Cardenas	Queretaro	5,580
Matamoros	Federal District	4,320
Matamoros	Jalisco	3,870
Nuevo Laredo	Durango	2,880
Veracruz	Michoacan	2,340
Matamoros	Aguascalientes	2,250
Other	Other	10,350
Wheat Shipped by Rail within Mexico during 2005		1,590,930
Total U.S. Wheat Exports to Mexico during 2005		3,717,594

Source: Mexican Railway Industry Representatives

U.S. Rice Exports to Mexico

The United States exported 686.1 tmt of rice to Mexico during 2005, up slightly from 628.3 tmt in 2004 (U.S. Department of Agriculture). About ninety percent of this was paddy rice and required milling, while about nine percent was milled rice. The remainder was either brown or broken rice. Ultimately, all rice in Mexico is used for human consumption.

The Mexican Rice Council was able to partially address requests concerning destinations for U.S. rice in Mexico. The top destination for U.S. rice exports to Mexico during the first half of 2005 Veracruz, accounting for 156.6 tmt, or forty percent of shipments during the January to June period (Table 15). Other leading destinations were the state of Mexico with 72.7 tmt, followed by Nuevo Leon at 66.0 tmt, and Guanajuato at 38.1 tmt.

Table 15. Destination for U.S. Rice Exports to Mexico, January to June, 2005

States	Metric Tons	Percentage
Veracruz	156,589	40.4%
Mexico	72,724	18.8%
Nuevo Leon	66,035	17.0%
Guanajuato	38,143	9.8%
Federal District	16,983	4.4%
Sinaloa	3,907	1.0%
Chihuahua	2,620	0.7%
Baja California	2,428	0.6%
Queretaro	806	0.2%
Jalisco	374	0.1%
Coahuila	311	0.1%
Tamaulipas	200	0.1%
Sonora	82	0.0%
Quintana Roo	1	0.0%
Unidentified Destinations	26,490	6.8%
TOTAL	387,694	100.0%

Source: Mexican Rice Council

Note: Sum of the individual numbers may not equal total due to rounding.

The rail industry representatives contacted indicated that all rice moved by truck within Mexico. Resources and time constraints limited contacts with the numerous trucking companies which transport rice in Mexico; however, this may be an area for future research. As a result, there are no shipment data available for rice movement within Mexico.

U.S. Soybean Exports to Mexico

The United States exported 3.44 mmt of soybeans to Mexico during 2005, up significantly from 2.87 mmt in 2004 (USDA). All these exports were crushed into meal and oil in Mexico. The main locations where soybeans are crushed include Merida in Yucatan, Monterrey in Nuevo Leon, Guadalajara in Jalisco, northern Mexico City, Guanajuato, and near the ports in Veracruz and Coatzacoalcos (John Baize).

Rail transportation data collected indicates that 1.11 mmt U.S. soybeans were transported via rail within Mexico in 2004 and 1.00 mmt during 2005. This accounts for 39 percent and 29 percent, respectively, of total U.S. soybean exports to Mexico for 2004 and 2005. The major destinations for 2004 U.S. soybeans shipped via rail within Mexico were Guanajuato with 396.3 tmt, Tamaulipas with 250.6 tmt, Hidalgo with 168.3 tmt, Nuevo Leon with 151.6 tmt, and Jalisco at 102.4 tmt (Table 16). During 2005, leading destination was once again Guanajuato at 474.8 tmt, followed Nuevo Leon with 237.3 tmt, Hidalgo with 115.9 tmt, Tamaulipas with 115.5 tmt, and Jalisco with 29.0 tmt.

The leading city-to-state pairs for U.S. soybean rail shipments to Mexico during 2004 were Altamira to Guanajuato with 282.2 tmt, followed by Matamoros to Tamaulipas with 198.2 tmt, Veracruz to Hidalgo at 136.4 tmt, Nuevo Laredo to Guanajuato with 114.0 tmt, and Nuevo Laredo to Nuevo Leon at 102.5 tmt (Table 17). The leading city-to-state pairs for 2005 were the

Table 16. Destinations for U.S. Soybean Exports to Mexico Shipped by Rail, 2004 and 2005

2004		2005	
Destination	Metric Tons	Destination	Metric Tons
Guanajuato	396,270	Guanajuato	474,750
Tamaulipas	250,560	Nuevo Leon	237,330
Hidalgo	168,300	Hidalgo	115,920
Nuevo Leon	151,560	Tamaulipas	115,470
Jalisco	102,420	Jalisco	28,980
San Luis Potosi	31,770	San Luis Potosi	16,380
Durango	8,820	Aguascalientes	5,850
Aguascalientes	8,640	Durango	3,600
Guerrero	1,440	Queretaro	2,340
		Federal District	630
Total	1,119,780	Total	1,001,250

Source: Mexican Railway Industry Representatives

same as 2004 but in a slightly different ranking. Leading was the Altamira to Guanajuato pair with 256.3 tmt, followed by Nuevo Laredo to Guanajuato with 201.9 tmt, Nuevo Laredo to Nuevo Leon at 154.0 tmt, Veracruz to Hidalgo at 115.9 tmt, and Matamoros to Tamaulipas with 115.5 tmt (Table 18) (Figure 5).

Table 17. Railway Transportation for U.S. Soybean Exports to Mexico, 2004

Origin	Destination	Metric Tons
Altamira	Guanajuato	282,240
Matamoros	Tamaulipas	198,180
Veracruz	Hidalgo	136,350
Nuevo Laredo	Guanajuato	114,030
Nuevo Laredo	Nuevo Leon	102,510
Nuevo Laredo	Jalisco	63,720
Matamoros	Nuevo Leon	49,050
Altamira	Tamaulipas	47,610
Altamira	Jalisco	33,480
Altamira	Hidalgo	31,950
Nuevo Laredo	San Luis Potosi	21,600
Nuevo Laredo	Durango	8,820
Nuevo Laredo	Aguascalientes	8,640
Matamoros	San Luis Potosi	8,550
Matamoros	Jalisco	5,220
Nuevo Laredo	Tamaulipas	4,770
Altamira	San Luis Potosi	1,620
Nuevo Laredo	Queretaro	1,440
Soybeans Shipped by Rail within Mexico during 2004		1,119,780
Total Soybeans Shipped by U.S. to Mexico in 2004		2,870,856

Source: Mexican Railway Industry Representatives

Table 18. Railway Transportation for U.S. Soybean Exports to Mexico, 2005

Origin	Destination	Metric Tons
Altamira	Guanajuato	256,320
Nuevo Laredo	Guanajuato	201,870
Nuevo Laredo	Nuevo Leon	153,990
Veracruz	Hidalgo	115,920
Matamoros	Tamaulipas	115,470
Matamoros	Nuevo Leon	80,730
Nuevo Laredo	Jalisco	21,330
Matamoros	Guanajuato	16,560
Nuevo Laredo	San Luis Potosi	13,680
Matamoros	Jalisco	7,650
Nuevo Laredo	Aguascalientes	5,850
Nuevo Laredo	Durango	3,600
Matamoros	San Luis Potosi	2,700
Altamira	Nuevo Leon	2,610
Veracruz	Queretaro	1,170
Nuevo Laredo	Queretaro	1,170
Nuevo Laredo	Federal District	630
Soybeans Shipped by Rail within Mexico during 2005		1,001,250
Total Soybeans Shipped by U.S. to Mexico during 2005		3,440,856

Source: Mexican Railway Industry Representatives

Figure 5. Top Ten Routes for U.S. Soybean Exports in Mexico, 2005



The Development of an Ongoing Reporting System

Numerous organizations were contacted in order to collect data in an effort to develop a clear picture of the destinations, uses, and modes of transport of U.S. grains and soybeans in Mexico. Telephonic and electronic communications, some two-way but much of it one-way, occurred over the course of approximately fourteen months. Offers were also made to visit with potential data contributors in an effort to ensure that the information did not get misdirected. It was anticipated that once a base-line description was established, participating organizations would continue to provide information on a quarterly or semi-annual basis to report the status of U.S. exports to Mexico.

Many organizations refused to participate, often after several months of communication.

The reasons ranged from the desire not to release confidential information to Mexican law not allowing for the release of such information. For others, it simply seemed to not be a priority. Unfortunately, some of the organizations which chose not to report were the only known sources for the data requested.

For organizations that did participate, several did so only after several months of coaxing, and then were only willing to provide partial information. Further, much of the information provided was not beyond 2004. There were also concerns regarding the distribution of specific, proprietary shipment data that required the reporting of data by state and not city of destination. This precluded reporting of city-to-city shipment pairs. This resulted in a partial description of the destinations, uses, and shipping modes of U.S. grain and soybean exports to Mexico.

It is not likely that an ongoing data collection system would succeed in Mexico. Even if those organizations that did provided information for this study were to overcome their reluctance and/or busy schedules to respond to requests in a timely fashion, the information provided would still represent an incomplete report of commodity movements within Mexico. Therefore, the continued pursuit of an ongoing reporting system for the destinations, uses, and shipping methods for U.S. grain and soybean exports to Mexico would be time consuming, expensive, and yield only partial information. Benefits of such a system would need to be weighed relative to costs.

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