The North American Market for Chihuahua Onions, Jalapeños and Beef Cattle

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CNAS Report 2008-02

April 2008

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The North American Market for Chihuahua Onions, Jalapeños and Livestock

Introduction

Producers in Chihuahua, Mexico grow a varied array of agricultural products that have been greatly impacted by increased trade stimulated by the North American Free Trade Agreement (NAFTA). The products, including fruits and vegetables, meat and livestock, grains, and cotton, have seen increased competition as well as new market opportunities. The purpose of this research effort is to enable agricultural producers in Chihuahua to better take advantage of North American marketing opportunities which have arisen as a result of NAFTA.

In January 2006, a preliminary report highlighting the North American market for eight perishable and five non-perishable products was presented to Fundacion Produce. The approach for the perishable products was based on market window analysis and the approach for the non-perishable products was supply and demand balance. As a result of that report, a decision was made to conduct further research which would assist Fundacion Produce in marketing Chihuahuan grown onions, jalapeños and beef cattle throughout North America.

This report is divided into three parts. First, a demographic and economic overview of the United States, Canada, and Mexico, including focus on important metropolitan areas, will be discussed. Second, further analysis of the North American market for onions, jalapeños and livestock will be presented. Finally, implications and opportunities for Chihuahua products will be discussed. In addition, an appendix containing important contact and market information will be included.

The Demographics and Economics of North America

In order to better take advantage of the opportunities brought about by NAFTA, it is necessary to determine the differences between the countries involved. Population and population growth rate, income, age structure, and gender are of special interest to understand the composition of the different markets and to design marketing strategies that will help the Chihuahua producers to commercialize its products.

Using the most recent demographic information available, including U.S. Census Bureau (Census) data, International Monetary Fund (IMF), projections from the Food and Agricultural Organization (FAO) of the United Nations, and the Central Intelligence Agency (CIA), a characterization of the United States, Canadian and Mexican markets was developed.

A presentation of the most important demographic facts is shown for each country and a comparison between countries is presented. Since important differences between metropolitan areas, market target of the present study, and the country as a whole exist, a detailed presentation of such variables is presented for the metropolitan areas as well.

DEMOGRAPHICS BY COUNTRY

Population

The population growth rates among the three countries under study are widely different. Mexico's growth was 1.15 percent, according to the Central Intelligence Agency of the United States. The United States and Canada each had a population growth rate of less than 0.9 percent (table 2).

Table 1. Population by Country (thousand persons)

Country	Est. 2007	2010	2015
Mexico	108,700.9	113,320	119,618
Canada	33,390.1	33,069	34,133
United States	301,139.9	314,921	329,669

Sources: FAO and CIA

Table 2. Population Growth Rates by Country

Country	Population growth rate (July 2007 estimates)
Mexico	1.153%
Canada	0.894%
United States	0.869%

Source: CIA

Income

One of the most important variables in determining the attractiveness of a market is income. Higher income levels and the application of an appropriate marketing strategy facilitate the expansion of sales.

The United States has the highest income level of the three countries with US$46,093 gross domestic product per capita in 2007, followed by Canada with US$39,854. Mexico is far below both the United States and Canada with US$8,246 for the same year (table 3). In the United States, households with income levels of US$50,000 and above are more likely to purchase fresh produce such as onions and jalapeños, so advertising targeted to this population could increase exports from Chihuahua to the market.

Table 3. Gross Domestic Product per Capita, Current prices (U.S. dollars)

Country	2005	2006	2007
Mexico	$7,297	$7,925	$8,246
Canada	$35,064	$38,658	$39,854
United States	$42,101	$44,168	$46,093

Source: IMF

Age structure

Important differences in age between countries under study were found. Although most of the population was found in the range of 15-64 years for all three countries (table 4), the median age for Mexico was 25.3 years for 2006, well below the median ages in Canada (38.9), and the United States (36.5) (table 5). The age differences call for different marketing strategies as needs and wants tend to change drastically as people age. For instance, results shown in *The Packer 2008 Annual Consumer Survey* indicate that U.S. consumers ages 40 to 49 are most likely to purchase onions and specialty peppers such as jalapeños. Therefore, targeting these consumers with advertising materials could help increase sales of Chihuahuan onions and jalapeños to the United States.

Table 4. Age Structure by Country (2006)

Mexico	0-14 years	30%
	15-64 years	64%
	65 and over	6%
Canada	0-14 years	18%
	15-64 years	69%
	65 and over	13%
United States	0-14 years	20%
	15-64 years	67%
	65 and over	13%

Sources: FAO and CIA

Table 5. Median Age by Country (2006)

Mexico	Total	25.3
	Male	24.3
	Female	26.2
Canada	Total	38.9
	Male	37.8
	Female	39.9
United States	Total	36.5
	Male	35.1
	Female	37.8

Sources: FAO and CIA

DEMOGRAPHICS BY METROPOLITAN AREAS

Population

Since the products under analysis have low value, the implementation of marketing strategies which focus on areas where a high population concentration exists. This approach provides the opportunity to maximize the impact of such strategies at the lowest cost per unit. For that reason, information regarding the top metropolitan areas of Mexico, the United States and Canada are presented next.

In 2000, Mexico City had the largest metropolitan area (with a population of 17.8 millions) and encompassed districts and municipalities of the Federal District and Mexico state. The seven largest metropolitan areas in Mexico included 27.3 million people. In 2006, 79 million people resided in the top ten U.S. metropolitan areas. The New York metropolitan area alone included 18.8 million people followed by Los Angeles with a population close to 13 million. 2006 estimates showed that Canada's largest metropolitan area was Toronto, Ontario with a population of 5.4 million people, and second largest was Montreal, Quebec with an estimated population of 3.8 million.

Unfortunately, estimates for the "Zona Metropolitana" were not available for 2006, making it difficult to directly compare the two countries metropolitan areas. However, during 2000, there were seven metropolitan areas with more than a million people in Mexico with a total population of 27.3 million people (table 8). Given the enormous participation of the Mexican "Zona Metropolitana" in the Mexican population, a further detailed presentation of the entities included is presented to better direct the marketing strategies (table 9).

Table 8. 2000 Population of Top Seven Mexican Metropolitan Areas (thousand persons)

Zona metropolitana (D.F., Edo. de Mex.)	17,844.8
Guadalajara, Jalisco	1,646.2
Puebla, Puebla	1,271.7
Juarez, Chihuahua	1,187.3
Tijuana, Baja California	1,148.7
Zona metropolitana Monterrey	3,147.9
Leon, Guanajuato	1,020.8
Total	**27,267.4**

Source: Inegi. Sistema Municipal de Base de Datos

Table 9. Population of Zona Metropolitana, 1,000 Persons (D.F., State of Mexico)

Grand Total 17,844.8

DELEGACIONES	**8,605.2**	***MUNICIPIOS CONURBADOS***	**9,239.6**
Iztapalapa	1,773.3	Ecatepec de Morelos	1,622.7
Gustavo A. Madero	1,235.5	Nezahualcóyotl	1,226.0
Alvaro Obregón	687.0	Naucalpan de Juárez	858.7
Coyoacán	640.4	Tlalnepantla de Baz	721.4
Tlalpan	581.8	Chimalhuacán	490.8
Cuauhtémoc	516.3	Atizapán de Zaragoza	467.9
Venustiano Carranza	462.8	Cuautitlán Izcalli	453.3
Azcapotzalco	441.0	Tultitlán	432.1
Iztacalco	411.3	Valle de Chalco Solidaridad	323.5
Xochimilco	369.8	Ixtapaluca	297.6
Benito Juárez	360.5	Nicolás Romero	269.5
Miguel Hidalgo	352.6	Coacalco de Berriozábal	252.6
Tláhuac	302.8	Chalco	218.0
Magdalena Contreras, La	222.1	Paz, La	212.7
Cuajimalpa de Morelos	151.2	Texcoco	204.1
Milpa Alta	96.8	Huixquilucan	193.5
		Tecámac	172.8
		Zumpango	99.8
		Tultepec	93.3
		Others	629.6

Source: Inegi. Sistema Municipal de Base de Datos

It is important to note that in the "Zona Metropolitana," two Federal Districts and two municipalities had more than one million people. Iztapalapa district had 1.77 million people while Gustavo A. Madero district had 1.24 million. During 2000, Ecatepec de Morelos and Nezahualcoyotl municipalities had 1.62 and 1.23 million people, respectively.

For the United States and Canada, it was possible to find 2006 estimates that can be used when creating market strategies to tap into these markets. The following tables present the findings.

Table 10. Population of Largest Ten U.S. Metropolitan Areas, 1,000 Persons (2006 estimates)

New York	18,818.5
Los Angeles	12,950.1
Chicago	9,505.7
Dallas-Fort Worth	6,004.0
Philadelphia	5,826.7
Houston	5,539.9
Miami	5,463.9
Washington	5,290.4
Atlanta	5,138.2
Detroit	4,469.0
Total	**79,006.5**

Source: U.S. Census Bureau

In 2006, more than 40 million people lived in the three largest U.S. metropolitan areas. New York was notably the largest U.S. Metropolitan area with an estimated population of 18.8 million people (Table 10). This population concentration can help to reduce distribution costs and, in some cases, help to implement other marketing strategies. For instance, there may be some advertising economies targeting higher density populations, but total marketing expenditures would likely be higher. For instance, a television, radio, or print advertisement in Houston or Miami will likely be seen or heard by more potential consumers than in Austin or Tampa; however, the advertisement will also cost more in the larger city than in the smaller city.

Table 11. Population of Top Ten Canadian Metropolitan Areas, (2006 estimates)

Toronto, Ontario	5,406.3
Montreal, Quebec	3,666.3
Vancover, British Colombia	2,236.1
Ottawa, Ontario-Quebec	1,158.3
Calgary, Alberta	1,107.2
Edmonton, Alberta	1,050.0
Quebec, Quebec	723.0
Hamilton, Ontario	716.2
Winnipeg, Manitoba	706.7
London, Ontario	465.7
Total	**17,235.8**

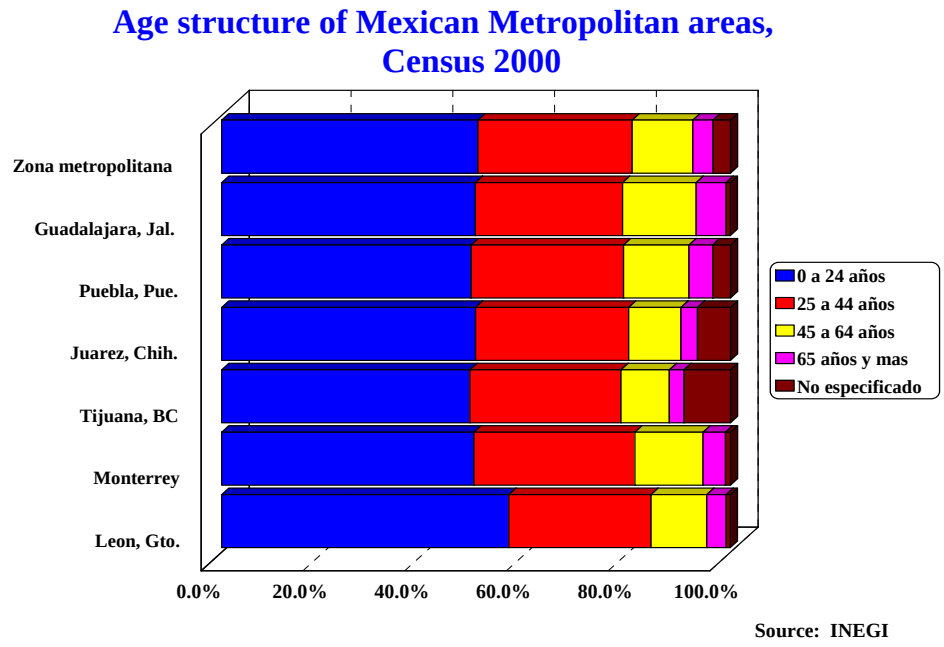
Source: Statistics Canada, www.statcan.ca

Canadian metropolitan areas are smaller in comparison to those of the United States. In 2006, only Toronto was larger than three of the top ten U.S. metropolitan areas (Table 11). It is important to note that if marketing strategies are directed to this market, the size of the Canadian metropolitan areas calls for a different approach than the one to be used in the United States.

Age structure

As noted before, the population in Mexico is younger than the population in the United States and Canada. According the Census 2000, most of its population ranged between 0 and 24 years followed by the range between 25 and 44 years old (figure 1).

Figure 1

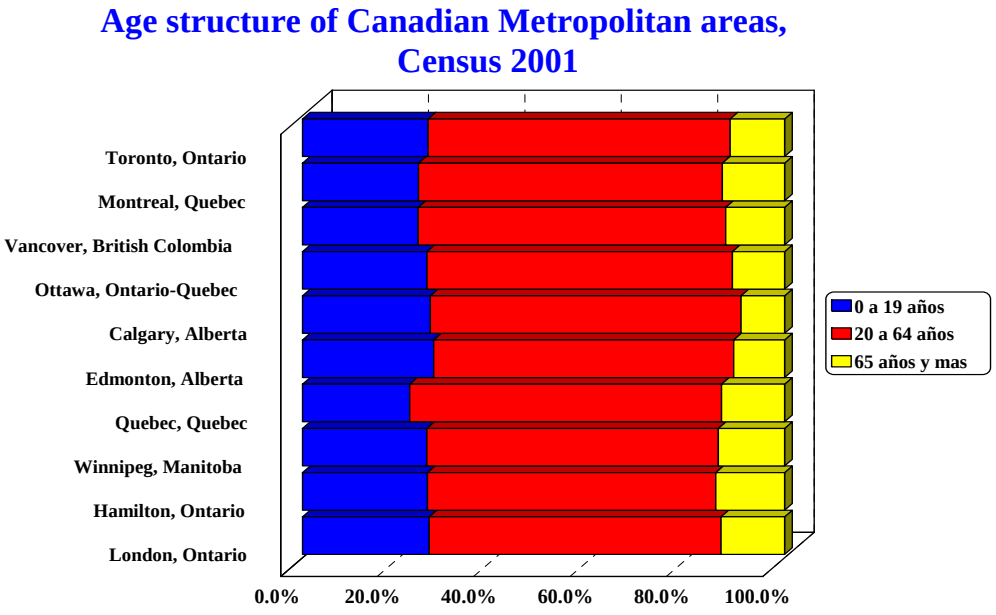


Source: INEGI

Age Structure of Canadian Metropolitan Areas, Census 2001

Different to the Census in Mexico and the United States, the Canadian Census 2001 groups the population in only 3 brackets. So comparison between Canada and the other countries considered in the study is difficult. As it is easy to observe from the graph that follows, most of the Canadian population had ages between 20 and 64 years (Figure 2).

Figure 2

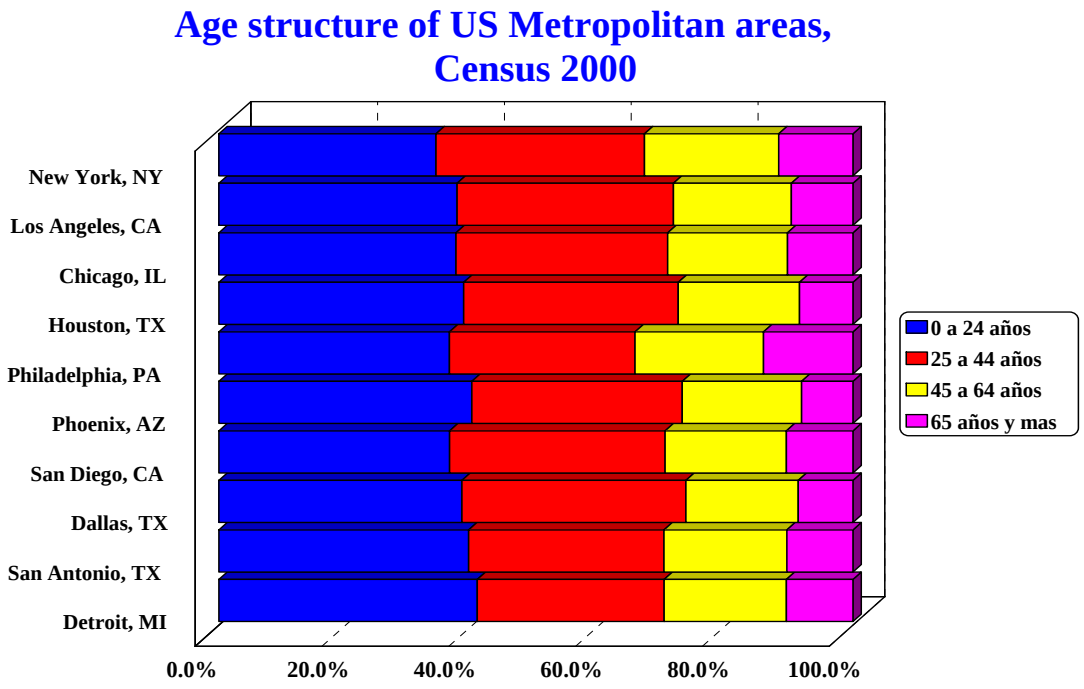


Source: 2001 Census of population- Statistics Canada

Age Structure of U.S. Metropolitan Areas, Census 2000

In the United States, people with ages between 0 and 24 years represented the biggest proportion, people between 25 and 44 years old followed (figure 3).

Figure 3



Source: US Census Bureau

Expenditures

Ottawa-Gatieneau had the highest expenditure level of all Canadian Metropolitan areas in 2005 with about US$74,500 (table 15). Despite the higher expenditure level of this metropolitan area, other metropolitan areas such as Calgary, Toronto and Vancouver had

higher expenditure levels in regard to food. Although expenditures among the different metropolitan areas ranged widely, between US$74,500 and US$48,700, food expenditures showed a smaller variation ranging between US$5,700 and US$6,900. Of the top ten Canadian metropolitan areas in 2005, Calgary spent the most on food while Winnipeg spent the least.

Table 15. Average Canadian Household Expenditures by Metropolitan Area, 2005 (U.S. dollars)

Metropolitan area	Total expenditure	Food	Percentage
Ottawa-Gatineau (Ontario Part)	$74,458	$6,633	9%
Calgary	$73,398	$6,947	9%
Toronto	$73,029	$6,893	9%
Vancouver	$62,442	$6,867	11%
Edmonton	$61,955	$6,499	10%
Winnipeg	$55,122	$5,669	10%
Montreal	$49,467	$5,995	12%
Quebec City	$48,721	$6,020	12%

Although it is hard to compare the average household expenditures of Canada with those of United States as information for the same year was not available, it is clear that proportion of food expenditure to total expenditures is consistently slightly higher in the United States relative to Canada.

In 2004, food expenditures in the United States ranged between US$5,600 and US$7,200 while total expenditures vary between US$44,500 and US$54,000 (table 16). The variation in food expenditures in Canada is slightly higher that the variation in the United States. Besides, the total expenditure range in the United States was narrower than the total expenses variation in Canada.

Los Angeles spent the most of the top ten U.S. metropolitan areas in food with US$7,200 during 2003-2004. New York City followed closely with an average food expenditure of US$7,000. Phoenix, Detroit and Houston were the three U.S. metropolitan areas with the lowest level of expenditures in food with only about US$5,700 (table 16).

Table 16. U.S. Average Annual Expenditures of All Consumer Units by Metropolitan Area, 2003-2004 (U.S. dollars)

Metropolitan area	Total expenditure	Food	Percentage
San Diego	$53,949	$6,545	12%
Los Angeles	$52,652	$7,194	14%
New York	$51,979	$7,054	14%
Chicago	$50,627	$6,023	12%
Dallas-Fort Worth	$50,304	$6,111	12%
Houston	$48,063	$5,737	12%
Detroit	$46,731	$5,726	12%
Phoenix	$46,628	$5,698	12%
Philadelphia	$44,484	$5,622	13%

In the case of the United States, additional information about how Americans spent their money during 2003-2004 was available.

Since our interest is in finding ways to improve the commercialization of onions and jalapeño pepper, special attention should be put on the column “fruits and vegetables” as it reveals the expenses dedicated to the category were both are included (table 17). Once again, the Los Angeles metropolitan area is important, not only because it is the metropolitan area with the highest level of expenditure on food, but also has the highest fruit and vegetables expenditures, with about $800 dollars per person. New York and San Diego followed with fruit and vegetable expenditures of $735 and $709, respectively.

Table 17. U.S. Average Annual Household Food Expenditures on Food and Beverages by Metropolitan Area, 2003-2004

Metropolitan area	Total food expenditures	Food at home						Food away from home	Alcoholic beverages
		Food at home, total	Cereal & bakery products	Meats, poultry, fish, eggs	Dairy	Fruits, vegetables	Other food at home		
Chicago	$6,545	$3,427	$472	$855	$366	$606	$1,128	$2,597	$493
Dallas-Fort Worth	$7,194	$3,554	$470	$897	$378	$582	$1,227	$2,557	$507
Detroit	$7,054	$3,287	$470	$863	$339	$542	$1,073	$2,439	$380
Houston	$6,023	$3,107	$429	$813	$343	$535	$987	$2,630	$297
Los Angeles	$6,111	$4,064	$536	$1,076	$426	$799	$1,227	$3,131	$563
New York	$5,737	$3,879	$573	$1,102	$433	$735	$1,036	$3,174	$563
Philadelphia	$5,726	$3,051	$451	$875	$327	$511	$887	$2,572	$608
Phoenix	$5,698	$3,296	$450	$823	$366	$575	$1,081	$2,403	$469
San Diego	$5,622	$3,472	$463	$818	$357	$709	$1,126	$3,073	$445

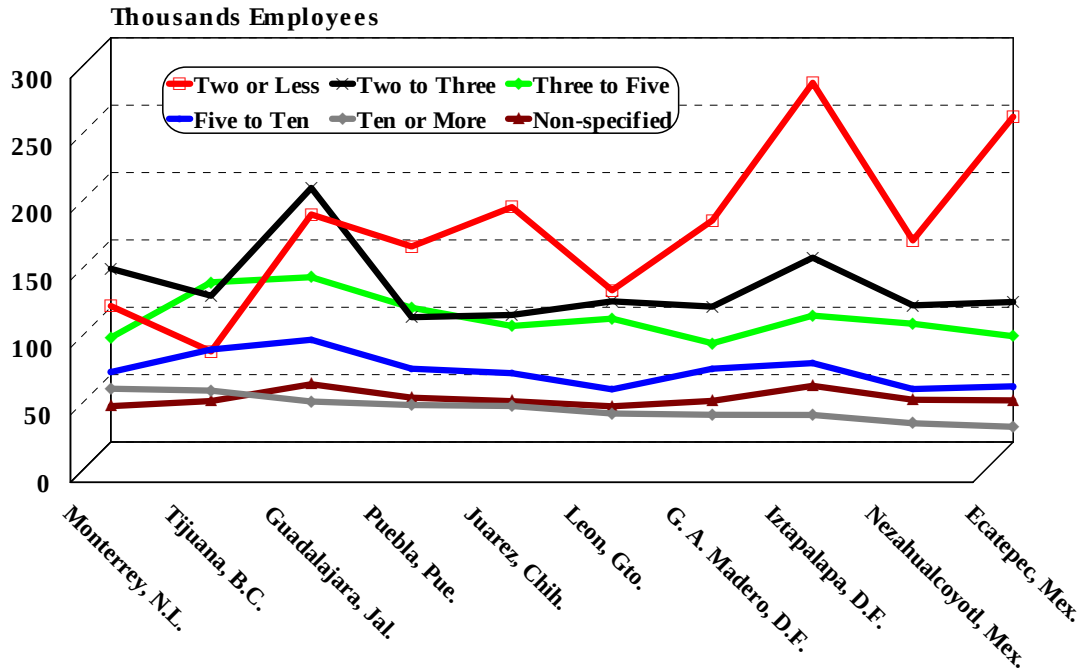
Source: Bureau of Labor Statistics, www.bls.gov

Since published expenditure patterns do not currently exist for Mexico, one way to approach the issue is to review information related to income ranges. Some of the metropolitan areas are highly industrialized and companies in the area hire unskilled workers who earn relatively low salaries. With 266,500 employees, Iztapalapa had the highest number of employees earning only one or two times the minimum wage in 2000, Ecatepec the Morelos followed very closely with 241,500 employees. Guadalajara accounted for the highest number of employees earning salaries varying from two to three times the minimum wage (figure 4).

On the other hand, Monterrey was the leading metropolitan area employing people earning more than ten times the minimum wage, while Guadalajara, with approximately 76,000 employees, had the largest number of employees earning between 5 and 10 times the minimum wage.

Figure 4

Number of Employees in Mexican Metropolitan Areas by Multiple of Minimum Wage, 2000



Source: Secretaria de Trabajo y Prevision Social. Comision Nacional de Salarios Minimos

A Closer Look at the U.S. Market… The Ethnic Market

An important ethnic food market has developed in the United States, influencing consumer purchasing patterns. In July 2005, over 30 percent of the people residing in the United States were considered ethnic. The largest group was Hispanics, followed by African Americans and Asian Americans.

Such a strong ethnic presence has resulted in a market for ethnic food products of about US$75 billion per year in the United States, accounting for one out of every seven dollars spent on groceries. The ethnic food market is growing not only because of new immigrants, but also because many Americans prefer ethnic foods at least some of the time. In fact, 75 percent of ethnic food consumption comes from non-ethnic customers.

The growth of the ethnic market is strong as it is expected to increase by 50 percent over the next decade. Currently, 37 percent of all supermarket sales are composed of ethnic shoppers. However, this percentage is expected to increase as more retailers allocate additional shelf space for ethnic oriented products.

Food services are a major driver of the ethnic food market, representing 65 percent of the market. Furthermore, food services are also responsible for the introduction of new products and creation of trends. While U.S. supermarkets currently account for just 35% of the ethnic food sales, they are expanding participation in this market.

Although the newer ethnic products are not as mainstream as pizza or tacos, there is a strong growing demand by restaurants. Since potential profits are new entrants, more than 2,000 new ethnic products have been introduced since 2003.

As the popularity of ethnic foods increases and more people adopt the different foods of the world, the mainstream status is changing. Aside from Mexican and Italian foods, the most popular ethnic foods are Chinese, Japanese and Thai. Recent trends have also shown that Caribbean, African and Mediterranean foods as well as halal and kosher markets have an increasing consumer base.

It is important to note that ethnic foods have a wider consumer base in more affluent areas and television food shows, the internet, and new restaurant chains are key contributors to the ethnic influence on consumers. Moreover, this market is evolving. Future trends point to Australian, Brazilian, and Malaysian foods becoming increasingly popular with non-ethnic consumers.

Hispanic Market

Among all the ethnic groups in the United States, Hispanics are of special importance. In fact, Hispanics are the largest ethnic minority group in the United States, representing 14.7 percent of the U.S. population in 2006. Thus, Hispanics are the largest potential ethnic food market. Not only are Hispanics the largest group, but they also are also the fastest growing ethnic group and the majority of these are Mexican. It is estimated that by 2012, one out of every five Americans will be Hispanic.

The economic power of Hispanic families is growing in the United States as well. Consumer expenditures by Hispanics increased from US$504 billion in 2000 to over US$750 billion in 2005. By 2008, it is expected that Hispanic Americans will have a purchasing power of US$1.0 trillion. It is also estimated that Hispanics spend approximately US$55 billion on food annually. Further, studies have found that Hispanic families spend approximately 7 percent more than the average American family on food and apparel.

The Hispanic consumer segment can be divided into many categories. One classification, however, is of special interest as it reflects important changes in consumption patterns. Native born Hispanics who have exclusively lived in the United States and immigrant Hispanics are the components of this classification.

Native born Hispanics usually speak fluent English and their consumer patterns are closely related to those of other Americans. Immigrant Hispanics are attracted to Spanish language media and consumption patterns reflect their heritage. These groups can be further broken down by country of origin. This is recommended since some differences between countries can help to build a better marketing campaign. It is estimated that 67

percent of Hispanics are Mexican, 14 percent are South American, 9 percent are Puerto Rican, 4 percent are Cuban, and 7 percent from elsewhere, including Central America and the Caribbean.

The following purchasing patterns were found for Hispanic families:

- Hispanic families are larger than the national average, and they prefer to prepare and serve food at home;
- Hispanics go shopping twice as often as the average American;
- Freshness and authenticity of fruits and vegetables are extremely important to the Hispanic consumer;
- Hispanics are attracted to bilingual packaging and Hispanic influenced promotional efforts; and
- Hispanic consumers are no more or less brand loyal than the average American consumer.

In order to effectively increase sales and market share, the strong and growing presence of Hispanics in the U.S. market should be an important element of any new marketing strategy, especially for onions and jalapeños. For instance, preferences for bilingual packaging, authenticity and freshness are aspects that can help increase sales for Chihuahuan producers, if correctly incorporated into marketing strategies

ONION MARKET WINDOWS

To better understand the competitiveness of Chihuahua in the North American market, the following figures were generated using the most up-to-date information available related to production levels and prices.

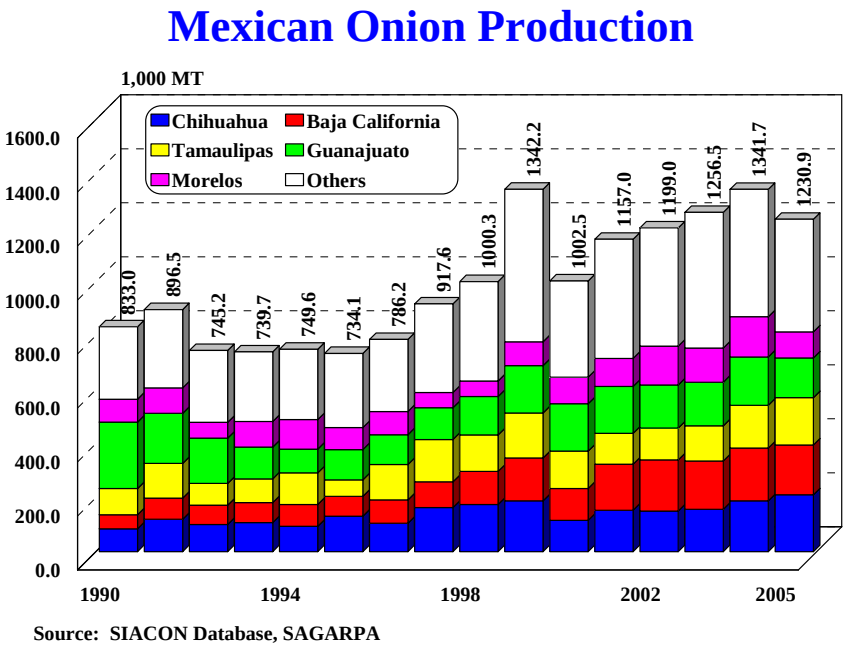
Chihuahua is typically the second leading producer of onions in Mexico (figure 5). In 2005, Chihuahua was the leading onion producer, with 210,500 tons of production. Moreover, a growing trend in average Chihuahua onion production was discovered. In the period 1990-1994, Chihuahua's average onion production was 101,000 tons. For

2004-2005, average onion production in Chihuahua was 199,000 tons. Chihuahua production represents about 17 percent of total annual Mexican onion production.

Chihuahua's production occurs mostly from June to October, and represents 27 percent of Mexican production during that time (figure 6). Unfortunately, most Chihuahua production occurs when U.S. prices are declining and U.S. shipments are level (figure 7). Among main U.S. shippers during June-October are Texas, New Mexico, Georgia and Central California early in the period; and California, Washington, Oregon and Idaho, later in the period. Figure 8 shows how harvests seasons overlap between these states. Chihuahua onions produced earlier in the year would typically face much less competitive pressure, and therefore higher prices than the current market window. Exploration of earlier maturing varieties might be one option to consider in order improve market conditions and would result in a more orderly market situation.

In Appendix A, there is a list of various fruit and vegetable dealers and brokers, who can be contacted to improve the sales of onions by Chihuahua's producers.

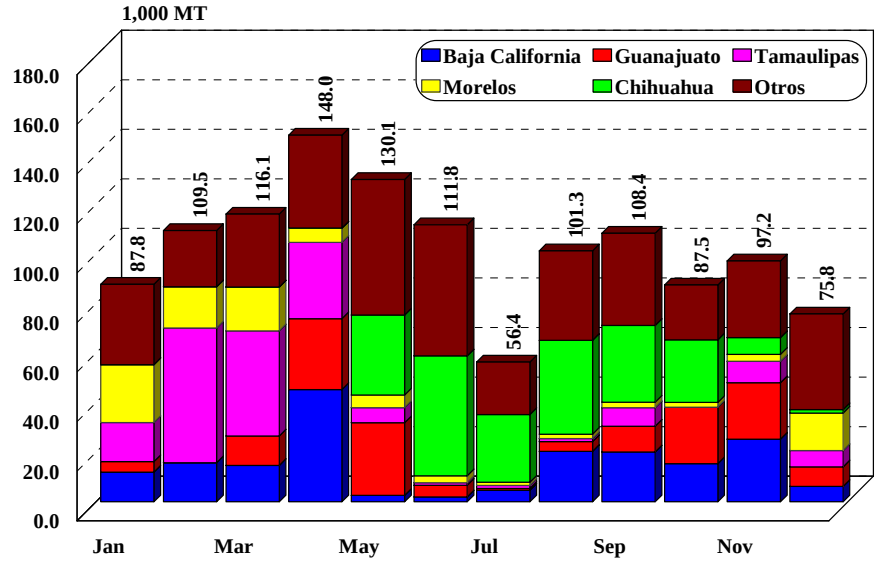
Figure 5



Source: SIACON Database, SAGARPA

Figure 6

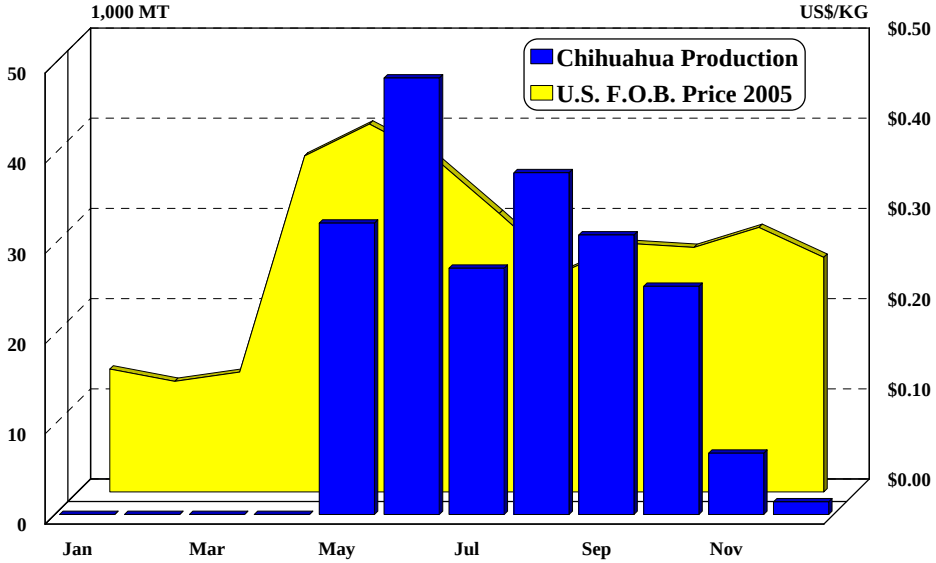
2005 Monthly Mexican Production of Onions



Source: SIACON Database, SAGARPA

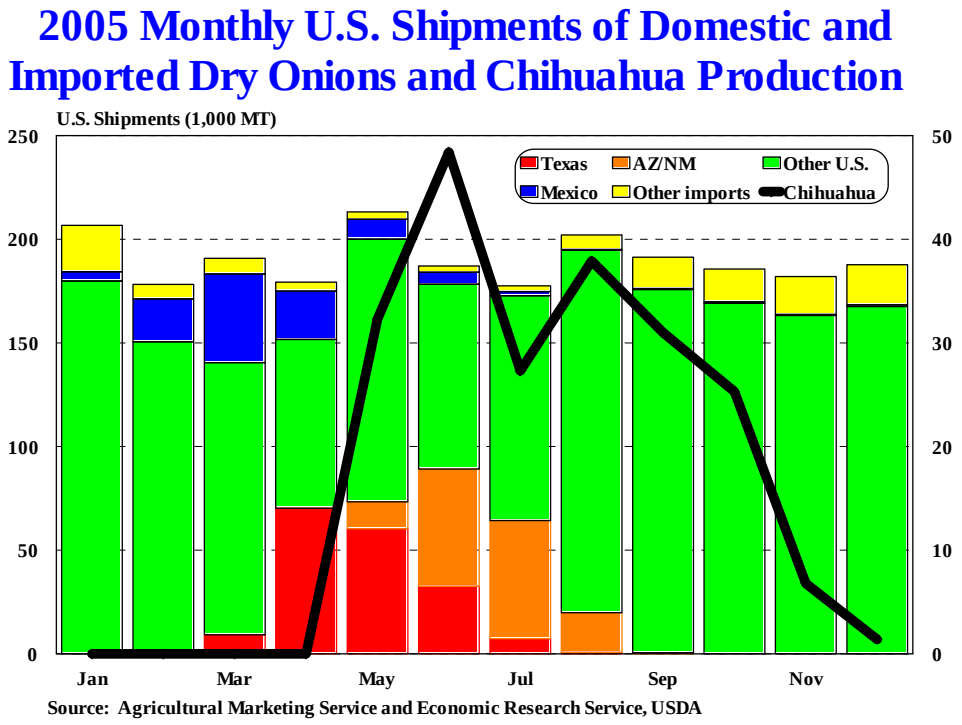
Figure 7

2005 Monthly Chihuahua Production and U.S. Price of Onions



Source: FAS and NASS, USDA

Figure 8



PEPPER MARKET WINDOWS

Information regarding jalapeños was not available since agricultural agencies in Mexico and the United States do not consistently report data for jalapeños peppers in a disaggregated form. However, the category of peppers as a whole can be considered to be a good proxy for such information when specific information regarding jalapeños is not available.

Chihuahua has been the leading producer of jalapeños in Mexico since 2002 (figure 9). Average Chihuahua production was 91.9 thousand tons in the period 1997-2005, and tripled to 279.7 thousand tons in 2005.

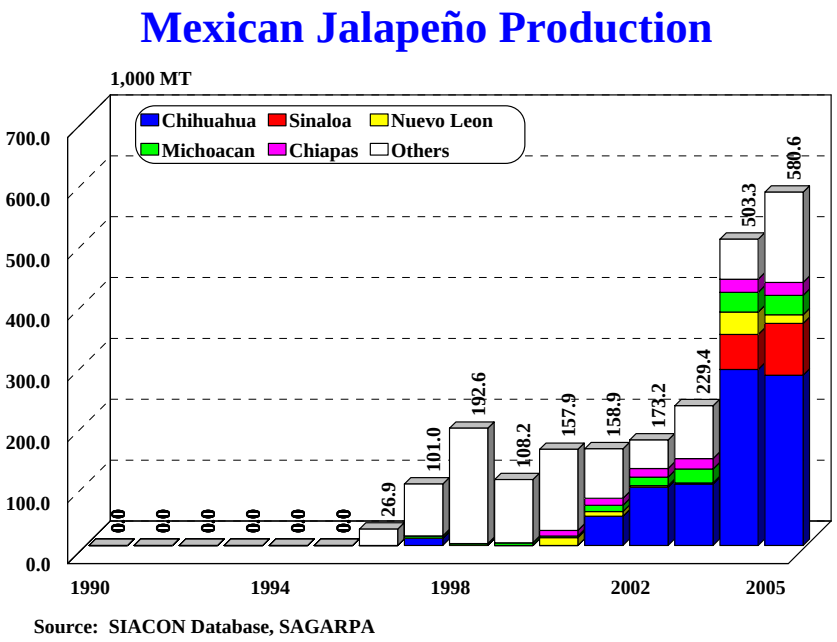
It is important to mention that Chihuahua pepper production typically represents 48 percent of Mexican pepper production and occurs from August through November.

Nevertheless, in August, more than 90 percent of the Mexican production is concentrated in Chihuahua (figure 10). Michoacan is Chihuahua's main competitor within Mexico.

Similar to onions, Chihuahua's peak jalapeño production occurs when U.S. import values are falling (figure 11). Earlier or later varieties, however, would be preferable in order to take advantage of higher prices and a less saturated market.

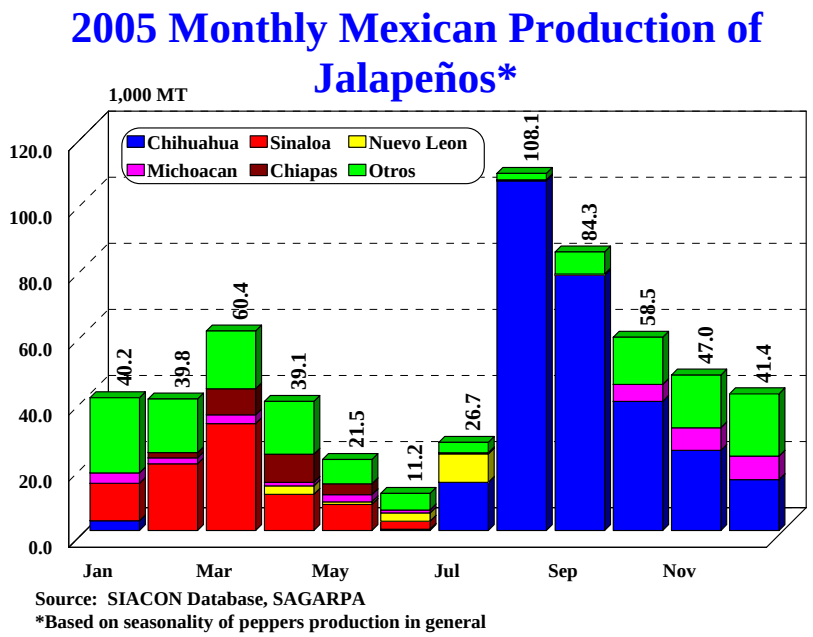
In Appendix A, there is a list of various dealers, who can be contacted to improve the sales of jalapeños by Chihuahua's producers.

Figure 9



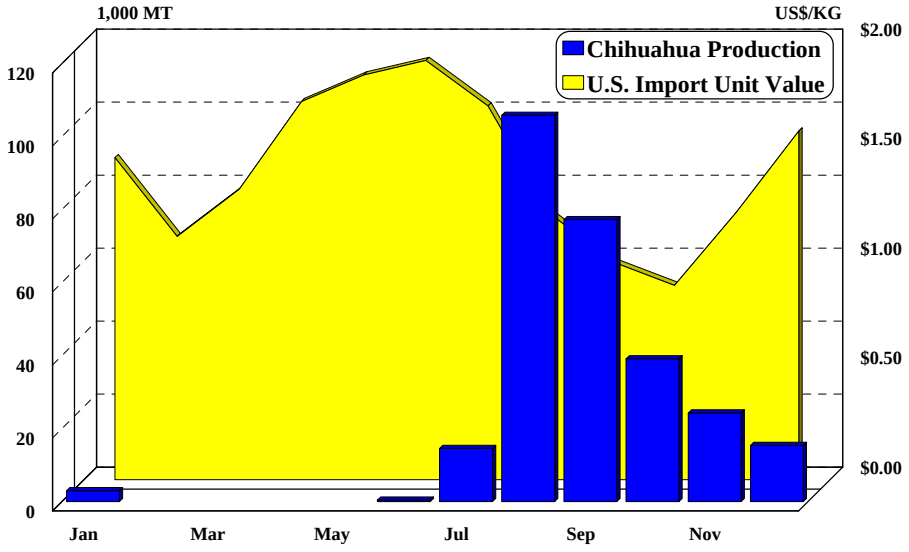
Source: SIACON Database, SAGARPA

Figure 10



Source: SIACON Database, SAGARPA
*Based on seasonality of peppers production in general

Figure 11



Source: FAS and NASS, USDA
*Based on seasonality of peppers production in general

Competitors and Opportunities for Mexican Peppers Producers in the U.S. Market[1]

In 2006, the United States ranked as the sixth largest chili pepper producer in the world behind China, Mexico, Turkey, Indonesia, and Spain. One of the likely large competitors for Mexico and other pepper producers in the future is China. Output of all peppers in China has been rising steadily over the last decade. In fact, during 1993-95, China produced one-third of the world pepper output and by 2003-05, this country accounted for one-half of the world's production. In the future, China will have the capacity to increase its exports to the U.S. market. Nevertheless, thanks to the NAFTA and subsequent duty-free export opportunities, Mexico has been able to more than double the output of sweet and pungent peppers in the same period by expanding its market in Canada and the United States. It is also unclear whether Chinese peppers are equivalent substitutes for Mexican fresh peppers and how readily Chinese peppers will be accepted by U.S. consumers. Phytosanitary issues and compliance with U.S. regulations also could limit Chinese sales initially.

The use of chili peppers in the United States has increased 38 percent, moving from an annual average fresh-weight equivalent of 1.95 kilograms per person during 1993-95 to 2.68 kilograms during 2003-05. During the late 1980s and early 1990s, chili peppers were one of the fastest growing specialty produce items. Such growth resulted in a 25 percent increase in consumption during the 1990s compared to the 1980s. This positive trend continued until 2006, with consumption growth just below that of the 1990s.

According to the U.S. Census of Agriculture, 4,748 farms harvested chili peppers from 42,666 acres in 2002. This was up from 2,087 farms and 27,990 acres in 1987. Although 49 U.S. states produced chili peppers, the production was highly concentrated in just a few. The largest concentration of chili pepper acreage in the United States occurred in southern New Mexico, accounting for 39 percent of all chili pepper acreage in the United States. Most of the production in New Mexico was located in the Hatch valley and in the outskirts of the city of Las Cruces. The counties of Luna, Doña Ana, and Hidalgo

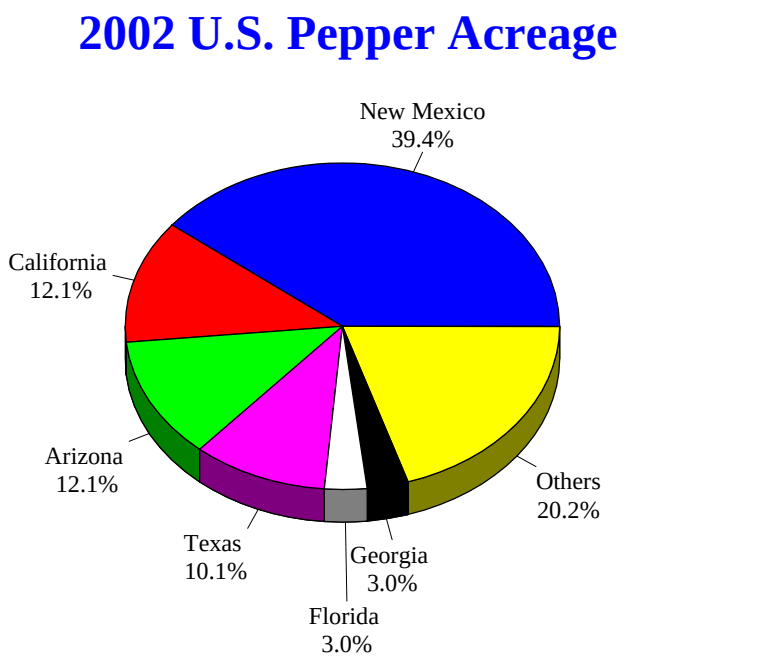
[1] In this section, the Chili peppers category is discussed. While this category includes jalapeños, it also includes other varieties of peppers.

accounted for three-quarters of the state's chili acreage. It is worthy of note that 71 percent of the New Mexico chili acreage was dedicated for processing (figure 12).

California had the second highest chili pepper acreage. According to the 2002 Census of Agriculture, California accounted for 12 percent of all chili pepper acreage in the United States. However, different from New Mexico, chili production was widely distributed within the State, with about one-third in Monterey county and substantial area in both Ventura and Santa Clara counties. About three-fourths of the production was sold in the fresh market.

Other important U.S. chili pepper production states are Arizona, Florida and Texas. Eighty-one percent of Arizona's pepper production is used for processing. While two-thirds of the Texas crop is processed, most of Florida chili peppers are shipped into the fresh market.

Figure 12



Source: 2002 Census of Agriculture

The steady increase in demand for chili peppers in the United States has resulted in increased imports. Trade data, expressed on a fresh-equivalent basis, indicate that in the period 2003-05 imports represented 72 percent of the domestic supply, while the share of domestic use represented only 37 percent during 1983-85 and 44 percent during 1993-05. It is important to mention that fresh-market pepper imports to the United States are not broken down by sweet and pungent (such as jalapeños) types, which makes it impossible to analyze trade changes of jalapeños in particular. It is important to mention that most of those imports come out of Mexico. **In table 18, it is shown how the value of Mexican fresh chili pepper imports surpasses its competitors; however, other countries have overtaken Mexico for a larger share of the U.S. market for processed pepper imports.**

Table 18. U.S. Chili Pepper Import Value, 2003-07 1/

Item	2003	2004	2005	2006	2007
	-Million dollars-				
Fresh market					
Mexico	197.0	213.0	234.6	234.2	255.1
Canada	9.8	11.1	0.4	.8	.3
Dominican Republic	.2	.2	.5	1.3	3.5
Others	1.7	2.3	1.1	1.4	1.9
Dried/dehydrated 2/					
Mexico	25.2	19.5	25.2	19.7	17.5
India	16.6	22.8	20.1	19.5	31.1
China	16.1	20.7	17.8	17.0	24.0
Others	18.8	21.4	18.2	24.9	27.4
Canned 3/					
Mexico	6.3	6.8	9.0	8.3	4.9
Turkey	1.2	2.6	3.6	9.1	8.6
European Union	3.9	2.8	2.5	2.4	6.8
Peru	0.3	1.2	2.5	2.1	6.6
Others	1.5	1.3	1.4	1.6	4.4

1/ U.S. Customs value 2/Excludes Paprika powder 3/Excludes pimientos

Source: Bureau of the Census, U.S. Department of Commerce

Livestock Dynamics and Challenges to Chihuahua's Producers

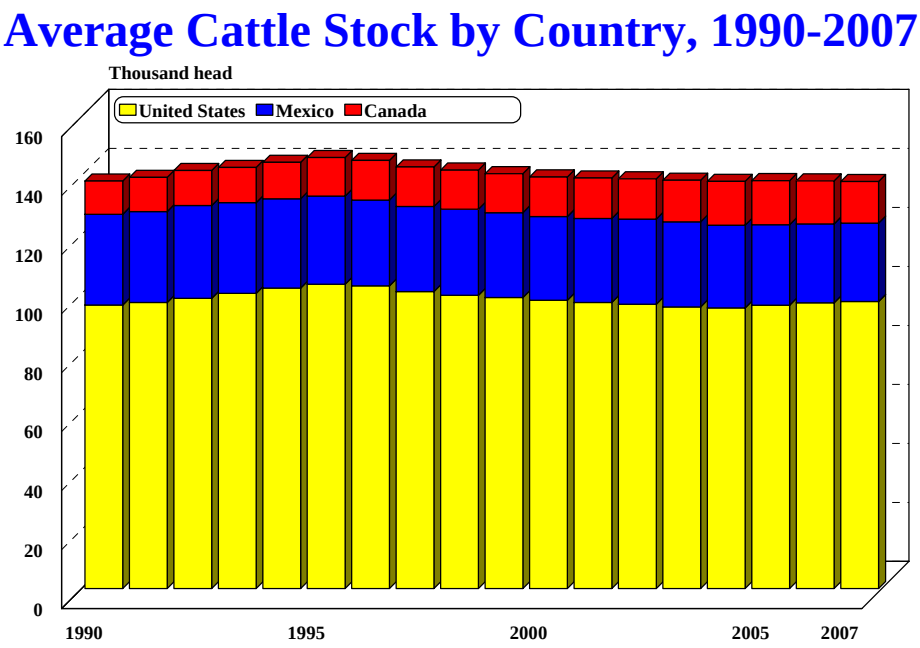
Globalization has caused major changes in many agricultural systems, including the beef cattle industry. Chihuahua cattle producers are no exception and will continue to be impacted by these changes. The market integration brought about by the NAFTA created both challenges and opportunities for Mexican cattle producers. The extent to which

Chihuahua cattle producers adapt to these new conditions and learn how to take advantage of the new opportunities will ultimately determine their success or failure.

The most important issues surrounding the future of the North America cattle industry are discussed in a recent report issued by the Farm Foundation, *The Future of Animal Agriculture in North America*. Since Chihuahua producers are directly affected by the opportunities and challenges created as a consequence of market integration, a summary of the report findings follow.

It is important to mention the magnitude of the industry. In 2007, it was estimated that the United States, Mexico and Canada had an average combined cattle herd of 138 million head. The United States accounted for 71 percent of the total herd in North America, while Mexico accounted for 19 percent and Canada 10 percent (figure 13).

Figure 13



Source: Production, Supply, and Demand Data, USDA, www.fas.usda.gov/psdonline

One of the most important trends in the North American cattle sector is the transition from a higher number of operations with smaller herds to a smaller number of operations with larger herds. The optimal size of cattle operations is expected to be increasingly driven by the extent to which economies of scale in production and marketing can be achieved. Effective supply chain management that improves cost efficiency and control, food safety and quality, and the ability to respond to consumer demands is part of this new trend. The role of technology as a means to increase efficiencies and provide information is also important to better manage the system.

Failure to implement changes in the Chihuahua cattle industry to adapt to these trends, making integration into the evolving supply-chain structures difficult, could put Chihuahua producers at a competitive disadvantage. One of the few options for small producers not integrated into the larger, cost efficient supply-chain structures is creating value-added niche markets. In these markets, consumers pay high enough premiums for differentiated products to offset the increased cost of production, grading, sorting, and distribution.

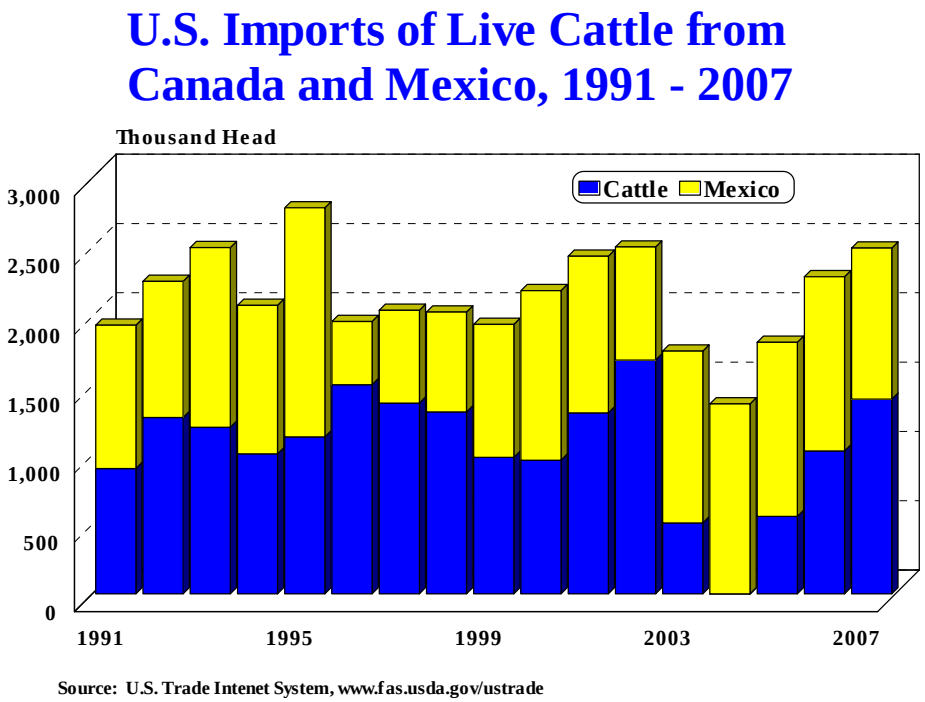
Another strategy could be for small and mid-size producers to form alliances or networks, letting them to act together as large producers in order to more effectively market feeder cattle. In both cases, a high level of cooperation and interdependence among producers would be necessary. Therefore, whichever path Chihuahua producers decide to take, being aware of new opportunities and challenges is a good starting point, and changes will be required.

It is expected that interdependence between producers and processing plants will result in the development of production-processing centers and supporting infrastructure as the optimal strategy for growth and expansion in the industry. This integration is not only expected to bring economies of scale, but it can also be used to increase food safety, improve marketing of live cattle and meats, and may also create the perception that Chihuahua products represent a naturally produced, safe and a reliable source.

Food safety is thought to continue to be a paramount consumer expectation. Food safety failures will be increasingly less tolerated by consumers, and new regulations and product processing and packaging will continue to evolve to provide a better food safety. For some consumers, the ability to trace products and process attributes will be seen as a key element in their purchasing decisions. Then, it is likely that animal identification and traceability systems will have a key role in the future of the animal agriculture industry.

An example of the strong economic effects of food safety in North America occurred in 2003. The discovery of bovine spongiform encephalopathy (BSE) in Canada caused the United States to close its border to the imports of live cattle coming from that Canada, negatively affecting Canadian producers. The problem for Canada represented an opportunity to Mexico, which increased exports to the United States to substitute for the Canadian supply of live cattle and satisfy the demand in the U.S. market (figure 14).

Figure 14



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

NAFTA has helped the integration of animal agriculture among trade partners. However, the countries involved are not isolated from the rest or the world, leaving the door open to

more challenges. Two factors are primarily identified as the shaping forces in the North American exports of animal products: income of developing countries and trade agreements. Even though consumer income growth in the United States and Canada has slowed, consumer expenditures on beef have been relatively stable in recent years. These factors can change the per capita beef consumption patterns in the three countries. As of 2007, United States was the leading beef consumer in the North American market with an estimated 41.9 kilograms per person, with Canada and Mexico consuming 32.6 and 23.5 kilograms per person, respectively (table 18).

Table 19. Per Capita Beef Consumption in North America (kilograms per person per year)

	Year				
Country	**2000**	**2004**	**2005**	**2006**	**2007**
Canada	31.9	32.0	33.4	33.3	32.6
Mexico	23.3	23.0	23.3	23.9	23.5
United States	43.9	42.7	42.2	42.4	41.9

Carcass Weight Equivalent; *Sources:* FAOSTAT, Foreign Agricultural Service, and CIA World Fact Book

Summary and Options to Consider

Chihuahua producers have been strongly impacted by trade resulting from the North American Free Trade Agreement (NAFTA). In addition, changes in the demographics have also raised additional challenges. For these reasons, it is important for Chihuahua producers to understand the demographics and its evolution for the three countries. In this regard, it was found that the people in Mexico tend to be younger than the people in the United States and Canada. Also, population growth rates were higher in Mexico compared to the United States and Canada. On the other hand, important differences in the income and concentration in metropolitan areas of the population in the United States and Canada can be useful to plan and implement marketing strategies that could help increase sales for Chihuahua producers.

Significant patterns in the trade of onions and jalapeños between Mexico and the United States were found. In both cases, the production of these crops in Chihuahua peaked when the import price started declining in the United States. This problem for Chihuahua producers calls for better ways to sell their products in the American market. For this reason, an attempt was made to identify and categorize some of the most important options to assist Chihuahua producers.

When considering options, Chihuahua onion, jalapeño and cattle producers should consider forming strategic alliances with other **producers, feedlots, and brokers**. For instance, as the number Chihuahua onion producers that participate in a marketing alliance increases, the ability of the group to assure buyers of consistent volumes grows. Further, buyers will have fewer sellers to negotiate with and play against each other. As a result, the prices received by the growers may increase. The same thought pattern applies to jalapeño and cattle producers.

Producers may also consider forming strategic alliances with brokers, food service suppliers, wholesalers, retail grocery chains, or even restaurants. By forming this type of alliance, relationships can be built over longer periods of time. Over the longer term, this can result in greater profits. To assist in this, Appendix A contains a list of vegetable brokers, including contact information and product coverage. It is not recommended to use a "shotgun approach" when contacting the brokers on the list, but rather focus on several firms with a more targeted approach.

Appendix B has information regarding major metropolitan areas in the United States and Canada. Included in this list are market shares of grocery retailers. A targeted approach to using this list would be effective, and geography should also be considered. The best approach may be to consider concentrating on Los Angeles, Houston, San Antonio, and Dallas-Fort Worth due to their proximity to Chihuahua. This would lead to lower transportation costs and less time in transit. Further, if only a few retail chains were targeted, such as HEB for San Antonio and Houston, Walmart for Dallas-Fort Worth, San

Antonio, and Houston, or Albertsons for Los Angeles and Dallas-Fort Worth, marketing efforts could be greatly multiplied.

Do not overlook the potential benefits of establishing relationships with smaller chains, such as Fiesta Mart in Houston and Minyard's in Dallas-Fort Worth. Each of these chains has about a ten percent market share of there areas, and may be a better fit for an alliance of Chihuahua onion and jalapeño producers than some of the larger stores

The integration of the North American market has caused important changes and will continue to shape agriculture in the three countries. The extent to which Chihuahua producers change and adapt to these changes will determine their success or failure in the future.

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Servicio de Información y Estadística Agroalimentaria y Pesquera of Secretaria de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SIAP/SAGARPA), the Statistics Division of the Mexican Ministry of Agriculture.

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Appendix A

U.S. Produce Brokers

Appendix A. U.S. Produce Brokers

SyKatz Produce Inc.

Full line of Mexican Vegetables & Vine-ripe tomatoes

877-509-3630, 520-377-2000, fax: 520-377-0298

Owen Margolis, Jim Robertson Jr., Cal McLachlan

TDI Tanimura Distributing Inc.

Hands-on quality control inspections on all commodities. Consolidation services available.

Nogales, Arizona	520-281-2600	Mario Arturo Rodriguez
Los Angeles, California	213-896-4300	President- Kirby Tanimura,

Sales- Chris Tagami, Daryl Tanita, Karl Horiuchi, Ross Huetinck, Jose M. Serrano, Arthur Duran

WilsonBatiz

Vine-ripe, roma and grape tomatoes, hot peppers, cucumbers, grapes, squash and mini sweet peppers. Greenhouse grown: tomatoes, cluster tomatoes, roma and grape tomatoes, cucumbers, mini sweet peppers, colored bell peppers and mini cucumbers.

Nogales, Arizona 520-375-5755, fax: 520-375-5855, warehouse: 520-375-5743

Enrique Arana ext. 2230, Eric Meyer ext. 2229, Alicia Bon Martin ext. 2231,

David Lundstrom ext. 2235

San Diego, California 619-710-2020, fax: 619-710-2039

Rudy Batiz ext. 2021, Dennis Hay ext. 2022, Isabel Pena ext. 2023

Thomas Produce Sales, Inc.

All varieties. Tomatoes and all mixed vegetables

1-800-247-6608

1-800-247-6609 Chuck, Richard & Charlie

Tepeyac Produce, Inc.

Squash (italian), hot peppers, vine-ripe tomatoes, tomatoes, roma tomatoes, colored bell peppers, greenhouse bell peppers

Nogales, Arizona 520-281-9081, fax: 520-281-9732, warehouse: 520-281-9195

Sales- Ruben Pesqueira & Mark Jones, Warehouse- Richard Serrano

Weis-Buy Farms Tomatoes, peppers, romas, vegetables, cantaloupes, honeydew

Nogales Florida 800-910-7096, fax: 239-433-3773

Sales- Chuck, Hank, David, Mark, Brian K., Arthur, JoLene

Veggies Inc. Produce in general

Nogales 520-281-5900, fax: 520-281-5922, warehouse: 520-281-5908

Old El Paso Z&S Fresh Fruit and vegetables

800-346-9211, fax: 520-281-1579

JPM Sales Co., Inc Fruits and vegetables

Nogales, Arizona 520-281-1607

Jim Munguia, Francisco Hernandez, Reyes German Jr.

Keith Connell, Inc.

Mexican fruits and vegetables

Rio Rico, Arizona 520-377-2308, 888-477-2308

Jimmy Connell, Dan O'Neil, Victor Valencia, Danny Connell, German Gallego

Maui-Fresh International

Nogales, Arizona 520-281-2644

Javier J.J. Badillo, Marc Mendivil, Daniela Velasco, Justin Lombardi

Santa Paula, California 805-921-3200

Mike Angelo, Liz Badillo, Art Bruno, Andy Bruno, Sandy Eason, Joe Navarro

Malena Produce, Inc. Various commodities
Nogales, Arizona 520-281-1533, fax: 520-281-2156
Danny, Saul, Gonzalo

Meyer Tomatoes: mature green, vine-ripe, roma, cherry, greenhouse beefsteak tomatoes. Vegetables: Green bell peppers, greenhouse colored bells.
520-264-1111, 520-375-6524, 520-264-0011
John McDaniel, Raquel Mendivil, Steve Harsh

L&M Companies, Inc. Fruits and vegetables
Nogales, Arizona 520-281-0114

Prime Sales, Inc. Fruits and vegetables
Rio Rico, Arizona 520-281-1298, fax: 520-281-1055
Alonzo, Arnie, Ted, Neo

Prime Time Red yellow and green peppers
Nogales, Arizona 760-399-4166, fax: 760-399-4281

Performance Produce
Nogales, Arizona 520-281-0700, fax: 520-281-0600
Alberto Puchi, Rudy Leal, Danny Puchi, Jerry Tabarez

P.D.G. Produce Inc. Cucumbers, bell peppers, squash, tomatoes, cherry tomatoes, peas, watermelons, cantaloupes, eggplant & honeydews
Nogales, Arizona 520-281-2607, fax: 520-281-4306, warehouse: 520-281-1009
Paul Guy, Max Allen, Enrique Heredia, Javier Esquivias

Omega Produce Co, Inc. Cucumbers, grapes, green bells, italian squash, jalapenos, kabocha, red bells, romas, tomatoes, watermelons, yellow S/N, eggplant, tomatillo, yellow bells, honeydews, perisan pickles
Nogales, Arizona 520-281-0410, warehouse: 520-281-1258
Nick Gotsis, Toru Fujiwara, Paul Bachelier, George Gotsis

Rene Produce Eggplant, cucumbers, tomatoes, roma tomatoes, bell peppers, zuchini, green house bell peppers, green house tomatoes, european cucumbers, slicer cucumbers & cluster tomatoes
Nogales, Arizona 520-281-9206, warehouse: 520-281-0806
Jorge Quintero, Jaime Hernandez, Paula Condes

Sigma Sales Distributing a full line of fruits and vegetables
Rio Rico, Arizona 520-281-1900, fax: 520-281-4468
Mike Smith, Sean Barton, Steven V. Schmitz, Lou Morello and Patsy Norzagaray

Nova Produce Field-grown tomatoes and mixed vegetables
Florida, Nogales, California 800-476-1141, 888-281-8988
Gary Budd, Victor Dimes, Lorie Lubyk, John Luciano, Alonzo Moya, Holly Primmer, Jim Sparks

Sucasa Produce Cucumbers, eggplant, italian squash, yellow squash, bell peppers, roma tomatoes, chilis, tomatoes, watermelon, beans, pickles
Old Tucson Rd. 520-281-1409, fax: 520-281-9467
Rob Soto, Chris King, Billy Donnelly

Seacoast Distributing, Inc. Full line of fruits & vegetables
Dana Point, California 949-496-3302, fax: 949-496-9514
Vic Rodriguez, Vince Towles, Joe La Mesa, Brent Batali, Marianne Hamburger-Ridsdale

Sunny Valley Organics Greenhouse tomatoes, two-layer tomatoes, roma tomatoes, grape tomatoes, eggplant, greenhouse bell pepper, green beans, cucumbers, zucchini, mini sweet peppers

520-281-2213, fax: 520-281-1399 Sunny, Miguel or Eduardo

Appalachian Produce Co., Inc.

Rio Rico, Arizona 520-281-1561, fax:520-281-4349

Bobby Hanan, Jim Huber, Linda Hanan

Big Chuy Distributors & Sons, Inc. Seeded & Seedless watermelon, winter squash, mini watermelons, cucumbers and mixed vegetables

Nogales, Arizona 520-281-4909, fax: 520-281-4835

Jesus Lopez Jr., Mike Gerardo & Alex Lopez

Bay Area Produce Inc. Full line of fresh fruits & vegetables

San Jose California 408-395-1111

Leo Goscila, Hank Imwalle, Ken Sato, Bob Loyst, Jack Holliday, Mike D'Antonio, Debbie Noyes, Steve Morris

Nogales, Arizona 520-761-1240

Rosie Favela Cornelius, Jerry Meek, Ruben Zuniga, Luis Gonzalez, Pat Leal

Grass Valley, California	530-271-7017	Larry Giacalone
Rancho Santa Fe, California	858-759-3489	Dan Kerrigan
San Clemente, California	949-498-5942	Dave Westendorf
Visalia, California	559-739-8747	Tony Taviano

Ciruli Bros Amex Distributing Co., Inc. Full line of Mexican fruits and vegetables

Nogales, Arizona Donna, Texas 520-281-9696, fax: 520-281-1473

Chuck Jr., Chris, Bert, Brian, Bernie, Ana, Susan, Steve, Maria, Hector

Crown Jewels Bell peppers, cucumbers, squash, eggplant, romas, grape tomatoes, chilis, watermelon, honeydew & grapes
Nogales, Arizona 520-281-2325, fax: 520-281-2347
Butch, Luis & Tobbie
Fresno, California 559-438-2335, fax: 559-438-2341
Rob, Steve P., Randy, George, Russ, Steve H. & Atomic

Del Campo Vine-ripe, roma and grape tomatoes, red bell peppers, eggplant, avocados, hydroponic beefsteak & cluster tomatoes, red, yellow & orage bell peppers, european cucumbers.
Rio Rico, Arizona 520-281-4733, shipping: 520-281-4722
Jim Cathey, Hector Sanchez, Patricia Lopez, Tony Grieb, Martin Ley, Jose Flores, Guillermo Brown

The Giumarra Companies Shipping watermelons, vegetables & tomatoes
Rio Rico, Arizona 520-281-1981, fax: 520-761-3889
John Corsaro, Nick Rendon, Ricardo Sanchez, Cesar Pacheco, Alan Durazo, Job Villanueva

Arkansas Tomato Shippers Tomatoes, cucumbers, bell peppers, squash, beans, mixed melons, hot peppers
Nogales, Arizona 888-706-2400

Bernardi & Associates, Inc. Tomatoes, mixed vegetables and melons
Nogales, Arizona 520-281-4011, fax: 520-281-2090
Al Bernardi, Joe Bernardi, Manny Gerardo, Joseph de la Ossa, Alex Leon, Lenny Bracamonte, John Willis
San Diego, California 858-279-5075, fax: 858-279-5097
Turlock, California 209-669-3445, fax: 209-669-3746
Fort Myers, Florida 239-334-8230, fax: 239-334-6756

Damon Tomatoes, romas, cherries, cucumbers, squash, eggplant, peppers, beans, oranges, chili peppers, cantaloupes, honeydews, watermelon
Los Angeles, California 520-761-3055, 520-281-1682, 213-694-2810
Michael Damon, Chris Damon, Ken Damon, Marcell Parra, Scott Melvin, Robert Quihuis, Gustavo Andrade, Marco Serrano

Fresh Direct, Inc. Vine-ripe tomatoes & mixed vegetables
Nogales, Arizona 520-287-0754, fax: 520-287-0780
Jorge Ruiz, Jason Martin, Freddy Pacheco, Tony Morales & Jorge Saavedra

Grower's Pride, L.L.C. Third-party food safety certified facility with customers tailored repack programs available. On-ground inspection, consolidation & in/out service available
Rio Rico, Arizona 520-377-2740, fax: 520-377-2745
J. Harry Ram, Jaime Contreras

JMB Distributing, Inc. Specialize in top-quality green beans
Rio Rico, Arizona 520-281-9322, fax: 520-281-9352, warehouse: 520-980-5169

Calixtro Distributing, Inc. All melons, tomatoes and mix vegetables
Rio Rico, Arizona 520-281-3432, fax: 520-281-3438
Joe Calixtro, Richard Calixtro, Charlie Calixtro, Frank Calixtro, Bob Calixtro, Fernando Huerta, Rene Rodriguez, Mickey Bachelier.

Covilli Brand Organics, Inc. Organic mixed vegetables and melons
Calexico, California 760-768-5440, fax: 760-768-5441 Alex Madrigal
Nogales, Arizona 520-377-2202, fax: 520-377-2984

Foodsource Bell peppers, tomatoes, cucumbers, squash, chilies
Nogales, Arizona 866-880-1952 Rod Sbragia

J. Michael & Co. Full line of fruits & vegetables from Mexico

760-634-6420, fax: 760-634-6424 Waynee Nakaji & Ed Espinoza

J.O.P. Distributing, Inc. All fruits and vegetables

Rio Rico, Arizona 520-281-9091, fax: 520-281-9194 Joe O. Puchi Jr.

Appendix B

Market Information for Leading U.S. and Canadian Metropolitan Areas

Appendix B. Market Information for Leading U.S. and Canadian Metropolitan Areas (Source: *The Packer Newspaper*)

<table>
<tr><th>City</th><th>Date</th><th>Highlights</th></tr>
<tr><td>New York</td><td>02/28/2005</td><td>1.8 million people live in the metropolitan area, which includes parts of New York, New Yersey and Pennsylvania in 2000, according to the U.S. Census Bureau.

New York city has five boroughs with 18,000 restaurants, according to www.iloveny.com</td></tr>
<tr><td>Dallas-Fort Worth</td><td>02/07/2005</td><td>2000 population for the metro area, 5.2 million
<table>
<tr><th rowspan="2">City</th><th rowspan="2">Store's name</th><th colspan="2">Market share</th></tr>
<tr><th>2002</th><th>2003</th></tr>
<tr><td rowspan="7">Dallas</td><td>Wal-Mart</td><td>13.5%</td><td>19.9%</td></tr>
<tr><td>Tom Thumb</td><td>18.5%</td><td>17.7%</td></tr>
<tr><td>Albertsons</td><td>19.1%</td><td>16.9%</td></tr>
<tr><td>Kroger</td><td>14.9%</td><td>12.8%</td></tr>
<tr><td>Minyard</td><td>10.7%</td><td>9.9%</td></tr>
<tr><td>Brookshire</td><td>4.4%</td><td>4.1%</td></tr>
<tr><td>Otro</td><td>9.0%</td><td>18.0%</td></tr>
</table>
Source: Shelby Report of the Southwest</td></tr>
<tr><td>Houston</td><td>02/07/2005</td><td>2000 population for the metro area, 4.7 million
<table>
<tr><th rowspan="2">City</th><th rowspan="2">Store's name</th><th colspan="2">Market share</th></tr>
<tr><th>2002</th><th>2003</th></tr>
<tr><td rowspan="7">Houston</td><td>Kroger</td><td>29.4%</td><td>26.2%</td></tr>
<tr><td>Wal-Mart</td><td>10.0%</td><td>18.5%</td></tr>
<tr><td>Randall's</td><td>14.5%</td><td>14.3%</td></tr>
<tr><td>HEB</td><td>14.1%</td><td>13.1%</td></tr>
<tr><td>Fiesta Mart</td><td>10.4%</td><td>8.9%</td></tr>
<tr><td>Lewis Food Town</td><td>2.5%</td><td>2.4%</td></tr>
<tr><td>Otro</td><td>19.0%</td><td>16.6%</td></tr>
</table>
Source: Shelby Report of the Southwest</td></tr>
</table>

<table>
<tr><th>City</th><th>Date</th><th>Highlights</th></tr>
<tr><td>San Antonio</td><td>02/07/2005</td><td>2000 population for the metro area, 1.7 million
<table>
<tr><th rowspan="2">City</th><th rowspan="2">Store’s name</th><th colspan="2">Market share</th></tr>
<tr><th>2002</th><th>2003</th></tr>
<tr><td rowspan="7">San Antonio</td><td>HEB</td><td>72.4%</td><td>67.1%</td></tr>
<tr><td>Wal-Mart</td><td>9.2%</td><td>19.3%</td></tr>
<tr><td>Military</td><td>5.8%</td><td>3.9%</td></tr>
<tr><td>Bear County Mkts</td><td>4.1%</td><td>3.1%</td></tr>
<tr><td>Kmart, Target</td><td>2.0%</td><td>2.3%</td></tr>
<tr><td>Foodarama</td><td>1.5%</td><td>1.2%</td></tr>
<tr><td>Otro</td><td>5.1%</td><td>3.1%</td></tr>
</table>
Source: Shelby Report of the Southwest</td></tr>
<tr><td>Los Angeles</td><td>08/09/2004</td><td>The market totals $11.6 billion.
The retail grocery market is divided as follows:
<table>
<tr><th>Store’s name</th><th>2004 market share</th><th>2004 # of stores</th><th>Jun-Ago 06 Market share</th></tr>
<tr><td>Ralphs</td><td>21.80%</td><td>150</td><td>20.40%</td></tr>
<tr><td>Vons</td><td>16.60%</td><td>111</td><td>15.59%</td></tr>
<tr><td>Albertsons</td><td>12.90%</td><td>87</td><td>11.76%</td></tr>
<tr><td>Food 4 Less</td><td>7.10%</td><td></td><td>8.00%</td></tr>
<tr><td>Smart & Final</td><td>4.40%</td><td></td><td>4.11%</td></tr>
<tr><td>Stater Bros.</td><td>3.60%</td><td></td><td>4.05%</td></tr>
<tr><td>Otro</td><td>33.80%</td><td></td><td>36.13%</td></tr>
</table>
Source: March 2004 Shelby Report</td></tr>
<tr><td>Toronto</td><td>03/07/2005</td><td>

Toronto is Canada’s largest retail market, representing $33 billion or 14% of total Canadian retail sales.
Toronto’s population is 2.5 million, making it Canada’s largest city.
One quarter of Canada’s population lives within a 100-mile radius of Toronto.
More than 100 languages and dialects are spoken in Toronto, and 43% of the population reported themselves as a visible minority.

</td></tr>
</table>

<table>
<tr><th>City</th><th>Date</th><th>Highlights</th></tr>
<tr><td>Los Ángeles</td><td>08/11/2003</td><td>
Los Angeles is the second-largest US metropolitan statistical area. The metro area's population increased more than 12% from 1990-2000, from 14.5 million to 16.3 million.

The diverse population of Los Angeles today distinguishes the city as the cultural hub of the Pacific Coast. People from about 140 countries, speaking about 86 languages, call Los Angeles home.

Individual city populations in Los Angeles are:
<table>
<tr><th>City</th><th>Population (1,000)</th></tr>
<tr><td>Los Ángeles</td><td>3800.0</td></tr>
<tr><td>Long Beach</td><td>472.0</td></tr>
<tr><td>Santa Ana</td><td>343.0</td></tr>
<tr><td>Anaheim</td><td>342.0</td></tr>
<tr><td>Riverside</td><td>274.0</td></tr>
<tr><td>Glendale</td><td>199.4</td></tr>
<tr><td>Huntington Beach</td><td>193.7</td></tr>
<tr><td>San Bernardino</td><td>191.6</td></tr>
<tr><td>Oxnard</td><td>177.9</td></tr>
<tr><td>Garden Grove</td><td>167.4</td></tr>
<tr><td>Oceanside</td><td>165.9</td></tr>
<tr><td>Ontario</td><td>165.0</td></tr>
<tr><td>Invine</td><td>162.0</td></tr>
<tr><td>Pomona</td><td>153.0</td></tr>
</table>
Area cities are among the leading US grocery markets sales:
<table>
<tr><th>Nacional rank</th><th>City</th><th>Sales (billon)</th></tr>
<tr><td>1</td><td>Los Ángeles</td><td>$11.5</td></tr>
<tr><td>13</td><td>Riverside-Sand Bernardino</td><td>$4.7</td></tr>
<tr><td>14</td><td>Orange County</td><td>$4.5</td></tr>
<tr><td>15</td><td>San Diego</td><td>$4.0</td></tr>
<tr><td>72</td><td>Ventura</td><td>$1.1</td></tr>
</table>
Sources: Chain store guide 2003 directory of supermarket, grocery and convenience stores; www.gocalifornia.about.com; US Census Bureau.
</td></tr>
<tr><td>Québec</td><td>04/26/2004</td><td>
85% of business in Quebec comes from large retail chains, said Serge Desjardins, vice president of Michel Desjardins Ltd., with the rest comprised of smaller chains, independent retailers and foodservice accounts.

The largest buyers in Quebec are Loblaw Cos. Ltd., Sobey's Inc. and Metro Richelieu Inc.
</td></tr>
</table>

<table>
<tr><th>City</th><th>Date</th><th>Highlights</th></tr>
<tr><td>Philadelphia</td><td>09/06/2004</td><td>Population: (2003 estimate). 5.8 million for the metropolitan statistical area, which ranks fourth nationally and represents a 1.5% increase since 2000.
Philadelphia is the nation’s fifth largest city and has an estimated population of 1.48 million, a 2.5% decrease from the 2000 census.

<table><tr><td>Persons per square mile: (Philadelphia county)</td><td>11,233</td></tr><tr><td>Education: (Philadelphia county). Bachelor’s degree or higher, ages 25 and older</td><td>7.90%</td></tr><tr><td>Average age: (Philadelphia county)</td><td>34.2</td></tr><tr><td>Median household income: (Philadelphia county)</td><td>$30,746</td></tr><tr><td>Housing units: (Philadelphia MSA) (million)</td><td>2.54</td></tr><tr><td>Average family size: (Philadelphia MSA) (Persons)</td><td>3.16</td></tr></table>Source: Census Bureau</td></tr>
<tr><td>Philadelphia</td><td>09/04/2006</td><td>Population: Philadelphia is the 5th largest in the U.S. and second largest on the East Coast with 1.4 million people. The metro area is the Fourth-largest with 5.8 million residents.
About 45.7 million people live within 200 miles of downtown.
The annual income of the people within that 200 mile radius is $1.3 trillion.
2005 jobs: 2.9 million in the metro area.
Median income: $30,746.
Fortune 500: Philadelphia companies on that prestigious list include: Comcast, Cigna, Lincoln Financial Group, Sunoco, Aramark, Crown Holdings Inc., Rohm & Hass Co., GlaxoSmithKline, Pep Boys.</td></tr>
<tr><td>Chicago</td><td>01/13/2003</td><td>Population metro area: 9.1 million.
Average income: $35,000.
There are more than 230,000 people employed in the Chicago area’s eating and drinking establishments.
<table><tr><th>Retailer</th><th>Market share</th></tr><tr><td>Albertson's (Jewel)</td><td>25.8%</td></tr><tr><td>Safeway (Dominick's)</td><td>22.2%</td></tr><tr><td>Sam's club</td><td>8.0%</td></tr><tr><td>Meijer</td><td>5.1%</td></tr><tr><td>Strack & Van Til</td><td>4.4%</td></tr><tr><td>Aldi</td><td>4.1%</td></tr><tr><td>Supervalu</td><td>3.5%</td></tr><tr><td>Others</td><td>26.9%</td></tr></table>Sources: 2003 World Almanac & Book of facts; 2002 supermarkets, grocery & convenience store chains, convention & tourism Bureau.</td></tr>
</table>

<table>
<tr><th>City</th><th>Date</th><th>Highlights</th></tr>
<tr><td>Montreal</td><td>07/01/2002</td><td>
<table>
<tr><td>Population</td><td>1.8 million in the city; 3.4 million in the metropolitan area.</td></tr>
<tr><td>Households</td><td>Two thirds of the city’s households live in rented homes, and the rest own their homes.
There are mostly one-family households with a few multifamily households, although there is a large nonfamily household population as well.</td></tr>
<tr><td>Household income</td><td>The average is $44,593 for the metropolitan area; $40,848 for the city proper. The average single income is $20,000-$24,000</td></tr>
<tr><td>Immigrant population</td><td>About 586,000 in the metropolitan area; 462,000 in the city proper.</td></tr>
<tr><td>Labor force</td><td>It includes 63% of those 15 and older in the metro area and about 60% in the city proper.</td></tr>
<tr><td>Age groups</td><td>Largest age group is 25-44 followed by 45-64.</td></tr>
</table>
Source: www2.wille.montreal.qc.ca
</td></tr>
</table>

Appendix C

Chain Store Purchasing Contacts in Major Metropolitan Areas of the Southwestern United States

Appendix C. Chain Store Purchasing Contacts in Major Metropolitan Areas of the Southwestern United States

Arizona

Bashas' Inc.
Units: 155
22402 S Basha Rd, Chandler, AZ 85248
PO Box 488, Chandler, AZ 85244-0488
Tel #: 480 895-9350 Fax #: 480 895-5394
http://www.bashas.com
Louie Macias - Specialist Floral, Produce;
Clay Volz - Assistant Buyer Produce

Safeway - Phoenix Division
Units: 115
2750 S Priest St, Tempe, AZ 85282
Tel #: 480 894-4100 Fax #: 480 929-8006
Richard Miller - Director Dairy, Frozen Food, Grocery

Albertsons Distribution Center
Units: 91
400 S 99th Ave Ste 100, Tolleson, AZ 85353
Tel #: 602 382-5400 Fax #: 602 382-5430
Brian O'Connor - Manager Purchasing, Produce

Fry's Food & Drug Stores of Arizona, Inc.
Units: 115
500 S 99th Avem Tolleson, AZ 85353
PO Box 1043, Tolleson, AZ 85353-1043
Tel #: 623 936-2100 Fax #: 623 907-7165
http://www.frysfood.com
Bill Wall - Director Floral, Produce

California - Los Angeles Area

Northgate Market, Inc.
Units: 22
522 E Vermont Ave, Anaheim, CA 92805
Tel #: 714 778-3784 Fax #: 714 778-3295
http://www.northgatemarkets.com
Lupillo Ramirez - Manager Ethnic Marketing; General Buyer

Vons
Units: 307
618 Michillinda Ave, Arcadia, CA 91007
PO Box 513338, Los Angeles, CA 90051-1338
Tel #: 626 821-7000 Fax #: 626 821-7257
Rick Cruz - Buyer Produce

Tawa Supermarkets, Inc.
Units: 27
6281 Regio Ave, Buena Park, CA 90620
Tel #: 714 521-8899 Fax #: 714 670-7799
Chen Lee - VP Produce

Smart & Final, Inc.
Units: 252
600 Citadel Dr, City of Commerce, CA 90040
PO Box 512337, Los Angeles, CA 90051-0337
Tel #: 323 869-7500 Fax #: 323 869-7858
http://www.smartandfinal.com
Kent Kuwata - Category Manager Produce

Stater Bros. Holdings
Units: 162
21700 Barton Rd, Colton, CA 92324
PO Box 150, Colton, CA 92324-0150
Tel #: 909 783-5000 Fax #: 909 783-9120
http://www.staterbros.com
Roger Schroeder - VP Produce Division

Ralphs Grocery Company
Units: 425
1100 W Artesia Blvd, Compton, CA 90220
PO Box 54143, Los Angeles, CA 90054-0143
Tel #: 310 884-9000 Fax #: 310 884-2525
http://www.ralphs.com
Dave Ackerman - VP Floral, Produce

Albertsons - Southern California Division
Units: 293
1421 Manhattan Ave, Fullerton, CA 92831
Tel #: 714 300-6000 Fax #: 714 300-6936
Steve Lawler - Director Produce

Trader Joe's Co.
Units: 257
800 S Shamrock Ave, Monrovia, CA 91016
PO Box 5049, Monrovia, CA 91017-7149
Tel #: 626 599-3700 Fax #: 626 301-4431
http://www.traderjoes.com
Lori Latta - Senior Buyer Dairy, Fresh Floral, Fresh Produce

Cardenas Market, Inc.
Units: 16
1621 E Francis St, Ontario, CA 91761
Tel #: 909 923-7426 Fax #: 909 923-4665
http://www.cardenasmarkets.com
Jose Pina - Buyer Produce

Super Center Concepts
Units: 27
15510 Carmenita Rd, Santa Fe Springs, CA 90670
Tel #: 562 345-9000 Fax #: 562 345-9059
http://www.superiorsuperwarehouse.com
Larry Alhstrom - VP Floral, Produce

Texas - Houston Area

Fiesta Mart, Inc.
Units: 50
5235 Katy Fwy, Houston, TX 77007
PO Box 7481, Houston, TX 77248-7481
Tel #: 713 869-5060 Fax #: 713 869-6197
http://www.fiestamart.com
J. P. Rios - Buyer Produce

Foodrama Market, Inc.
Units: 16
10810 S Post Oak Rd, Houston, TX 77035
Tel #: 713 723-8948 Fax #: 713 723-5702
John Barron - Buyer Floral, Produce

Gerland's Food Fair, Inc.
Units: 15
3131 Pawnee St, Houston, TX 77054
Tel #: 713 746-3600 Fax #: 713 746-3621
htttp://www.gerlands.com
Richard Noeth - Senior VP Fresh Produce, Floral

Kroger - Southwest Marketing Area
Units: 212
19245 David Memorial Dr, Conroe, TX 77385
Tel #: 713 507-4800 Fax #: 713 422-8027
Mike Krell - Merchandise Manager Floral, Produce

La Michoacana
Units: 75
888 W Sam Houston Pkwy S Ste 1 Suite 150, Houston, TX 77042
Tel #: 713 668-3869 Fax #: 713 668-3869
http://www.lamichoacanameatmarket.com
Alvira Ortega - Treasurer; General Buyer

Lewis Food Town, Inc.
Units: 25
3316 S Shaver St, South Houston, TX 77587
PO Box 4410, Pasadena, TX 77502-0410
Tel #: 713 910-6767 Fax #: 713 910-7221
Jim Ward - VP Operation; Director Purchasing

Randall's/ Tom Thumb
Units: 116
3663 Briarpark Dr, Houston, TX 77042
PO Box 4506, Houston, TX 77210-4506
Tel #: 713 268-3500 Fax #: 713 268-3489
http://www.randalls.com
http://www.tomthumb.com
Gary Owen - Manager Operations, Grocery

Sellers Bros., Inc.
Units: 19
4580 S Wayside Dr, Houston, TX 77087
Tel #: 713 640-1611 Fax #: 713 640-1254
John L. Sellers - Buyer Produce

Texas - Dallas/ Fort Worth Area

Albertsons Distribution Center
Units: 153
7550 Oak Grove Rd, Fort Worth, TX 76140
Tel #: 817 568-3700 Fax #: 817 568-3890
John Gilmore - Manager Purchasing, Produce

David's Supermarkets, Inc.
Units: 22
313 E Criner St, Grandview, TX 76050
PO Box 350, Grandview, TX 76050-0350
Tel #: 817 866-2651 Fax #: 817 866-2659
http://www.davidsfoods.com
Lonnie Button - Buyer Produce

Minyard Group
Units: 65
777 Freeport Pkwy, Coppell, TX 75019
Tel #: 972 393-8700 Fax #:972 393-8550
http://www.minyards.com
Doug Miniutti - VP Produce

Super Mercado Monterrey
Units: 6
300 E Jefferson Blvd, Dallas, TX 75203
Tel #: 214 943-7517 Fax #: 214 941-4403
Abelardo Galindo - General Manager; General Buyer

Texas - San Antonio Area

Bexar County Markets, Inc.
Units: 10
1500 S Zarzamora St Ste 512, San Antonio, TX 78207
Tel #: 201 227-8755 Fax #: 210 223-4976
Terry Warren - President; Director Marketing; General Buyer

H-E-B
Units: 303
646 S Main Ave, San Antonio, TX 78204
Tel #: 210 938-8000 Fax #: 210 938-7399
http://www.heb.com
Martin Otto - CFO; Senior VP Grocery

Mass Marketing, Inc.
Units: 48
401 Isom Rd Ste 100, San Antonio, TX 78216
Tel #: 210 344-1960 Fax #: 210 341-6326
http://www.supersfoods.com
Mike Toohey - Director Produce

Texas - El Paso Area

Lowe's Big 8 Foods
Units: 12
1480 George Dieter Dr Ste A, El Paso, TX 79936
Tel #: 915 857-6000 Fax #: 915 857-6026
Mark Henry - Buyer Produce

Quality Food Mart, Inc.
Units: 5
2700 N Piedras St, El Paso, TX 79930
Tel #: 915 565-7463 Fax #: 915 565-7475
Javier Silva - Manager Produce; Buyer Produce

Texas - Other Area

Lowes Food Stores, Inc.
Units: 71
1804 Hall Ave, Littlefield, TX 79339
PO Box 1430, Littlefield, TX 79339-1430
Tel #: 806 385-3366 Fax #: 806 385-5438
Lester Headrick - Director Produce

United Supermarkets Ltd.
Units: 49
7830 Orlando Ave, Lubbock, 79423
Tel #: 806 791-0220 Fax #: 806 791-7480
http://www.unitedtexas.com
Darvel Kirby - Director Produce; Buyer Perishables

Other

Wal-Mart Supercenters
Units: 2,195
702 SW 8th St, Bentonville, AR 72716
Tel #: 479 273-4000 Fax #: 479 273-4000
http://www.wal-mart.com
Jeff Macho - Senior VP, Global Procurement;
Bruce Peterson - Senior VP; GMM Perishables

Source: 2007 Directory of Supermarket, Grocery & Convenience Store Chains, Lebhar-Friedman, Inc., New York, http://www.csgis.com