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**John Ogonowski**  
**Latin America**  
**Farmer-to-Farmer Program**

## Executive Summary

In the United States, health is a growing concern among people as obesity is affecting 64.5 percent of Adults mainly because of high-calorie and low cost foods. Doctors and experts around the country have been stressing the risks associated with this disease and the need to consume more vegetables and fruits. However, according to the USDA, Americans are not consuming the right amounts of vegetables and fruits as recommended by the food guide pyramid (FGP).

We studied the market of tomatoes, yellow onions, sweet potatoes, and plantain in the US to find out if the consumption of each of the previous vegetables and fruit is high enough to encourage the debut of their imports from Latin countries, or if despite the health problems associated with eating junk food, Americans are still not consuming the recommended amounts of vegetables and fruits in general, and the ones cited above in specific, and therefore importing them would not be necessary.

Through this in depth study we have come to the following understandings:

- Yellow onions and tomatoes are in the top five of the most consumed vegetables in the US while sweet potatoes are consumed steadily and plantain are expected to grow in popularity.
- The import of tomatoes and yellow onion is dominated by Mexico and Canada.
- The US only slightly relies on the import of sweet potato to cover the need of its population, while relies excessively on the imports of plantain.
- All of the three vegetables and the fruit have regulations on them regarding their import to the US.

The market of both yellow onion and tomato is very large, the demand and the supply are well balanced making it a saturated market. Through the NAFTA agreement, Mexico and Canada have a tremendous advantage over other countries that would intend to compete in this market. Therefore any new coming should be careful and deeply analyze the competition as well as the finance related to regulations before entering this saturated market.

Regarding the sweet potato, US farmers have been producing enough to satisfy the demand, and imports have not been successful. The consumption of this vegetable has been fairly steady, however experts believe that because of its many health benefits, Americans could start eating it not only on thanksgiving but regularly.

There is a controversy regarding the market of plantain, experts debate over the future of this fruit in the US, although it is very popular among Hispanic, Americans are not considering it essential to their meals yet. It would be necessary, for now, for any new importer entering the market to mainly target the Hispanic population in the US.

As a conclusion to this executive summary, it is highly recommended to take into consideration the characteristics of each vegetable's and fruit's market, as well as the finances related to the standards that have to be met before beginning to import to the US.

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## Introduction

## Program Rationale

The John Ogonowski Farmer-to-Farmer Program, funded by the United States Agency for International Development, provides voluntary technical assistance to farmers, farm groups, and agribusinesses in developing and transitional countries to promote sustainable improvements in food processing, production, and marketing. The program relies on the expertise of volunteers from U.S. farms, land grant universities, cooperatives, private agribusinesses, and nonprofit farm organizations to respond to the local needs of host-country farmers and organizations.

To date, approximately one million farmer families (representing about five million people) have been direct beneficiaries of the FTF Program. Volunteers have provided direct hands-on training to over 80,000 people.

Winrock International and Florida International University's College of Business Administration have combined their resources and knowledge to implement the John Ogonowski Farmer-to-Farmer Program in Latin America, from 2003-2008.

The MAR 4613 course was created to add value to the Farmer-to-Farmer Program and prevent scarce volunteer resources from being diverted to requests for assistance, which are best, completed in the United States. The resulting freed up resources allow the program to fulfill requests with volunteers where an in country expert is a necessity. Of added value, hosts receive this additional US-based volunteer service at no cost to the FTF program.

## Introduction

### Research Objectives

The objective of this research is to analyze the US market potential of a variety of commodities. Our goal is to provide information on a variety of commodities, which can then be applied by our in-country partners to their business strategies. The primary beneficiaries of these reports are small and medium-sized farming cooperative groups which do not have the capability nor the resources to conduct these studies on their own.

It is of critical importance that while drawing conclusions to satisfy the research objective, a thorough analysis is carried out. In order to do so, some of the questions which must be analyzed are:

1. What is the demand of the product in question?
2. Who are the buyers and consumers of the product?
3. What are the quality standards and packaging requirements?
4. What is the distribution system for the product?
5. Who are the competitors?
6. What government regulations apply to the import of this product?

If it is a new product for the market, additional questions must be asked:

1. Who are the potential buyers of this product?
2. What are the potential distribution channels?
3. What are the additional important issues which must be investigated before attempting to export the product?
4. Are there any regulations which might inhibit this product from being sold in the US market?

### Research Method

Given that the research objectives include getting background information of the potential market of the commodities included in the report, the research was conducted using an explorative design. Two main methods were employed: secondary data research and personal interviews. In some instances focus groups with consumers were conducted.

The secondary research was conducted by searching and interpreting existing information relevant from governmental and private electronic sources. When specific information about a commodity was not found secondary research was guided by similar commodities relevant to the information needed.

In order to complement the secondary research, personal interviews with experts were conducted. The interviewees were either academic or commercial experts in the production and commercialization of the commodities in question. In some cases, the researchers felt the need to complement this information direct input from the consumers; in those cases focus groups session were conducted.

The sources of the information are cited through out the content of the report. Contact information of the experts is provided. At the end of the report conclusions and recommendations for future action are suggested.

# Tomato

## Tomato

## Product Description



Tomato (*Solanum lycopersicum*) is a plant in the Solanaceae or nightshade family, native to Central and South America, from Mexico to Peru. It is a short-lived perennial plant, grown as an annual plant, typically growing to 1-3 m in height, with a weakly woody stem that usually scrambles over other plants. It is a close relative of the potato.

The leaves are 10-25 cm long, pinnate, with 5-9 leaflets, each leaflet up to 8 cm long, with a serrated margin; both the stem and leaves are densely glandular-hairy. The flowers are 1-2 cm across, yellow, with five pointed lobes on the corolla; they are borne in a cyme of 3-12 together. The fruit is an edible, brightly coloured (usually red, from the pigment lycopene) berry, 1-2 cm diameter in wild plants, commonly much larger in cultivated forms.\*1

## Tomato

Tomatoes are very popular in the American garden, and their production, just like with zucchini, tends to exceed the needs of the grower. Nutritionally, the tomato belongs to the vegetable category, but botanically it's a fruit.

Now a days, tomatoes are all over the world, and used by different cultures in different ways, even though the seeds go straight through the human intestines because they can't be digested, tomatoes have only grown in popularity and their benefits to the health are believed to be many, among them preventing prostate cancer through a powerful antioxidant called Lycopene which is a component of the tomato.

Our basic food of everyday includes tomatoes somehow, and from the many ways we use tomatoes around the world:

- Tomato paste
- Tomato juice
- Felfel (Moroccan cuisine)
- Tomato purée
- Tomato pie
- Gazpacho (Andalusian cuisine)
- Ketchup
- Pa amb tomàquet (Catalan cuisine)
- Pizza
- Tomato sauce (common in Italian cuisine)

Processed Tomato	Fresh Market Tomato
Picked ripe and red	Picked green (some of the fresh tomatoes are gassed with the fruits own natural ripening hormone called ethylene to promote consistent ripening)
Used immediately: from the moment of picking less than 6 hours pass until the tomato is in the can	Don't have to be used immediately
Machine harvested: no need for humans except for picking out stray vines and any rare tomatoes that are moldy or crushed	Humans needed

## Statistical Data

### U.S. Production Data

The United States is one of the world's leading producers of tomatoes, second only to China. Aside from the potato, tomatoes are America's most important commercial vegetable, both in yearly weight consumed and annual yield.

### World Production Data

**Total production of tomatoes in the world in metric tons (2004)**

<b>China</b>	30,142,040
<b>The United States</b>	12,400,000
<b>Turkey</b>	8,000,000
<b>India</b>	7,600,000
<b>Egypt</b>	6,780,000
<b>Italy</b>	6,500,000
<b>Others</b>	44,528,811
<b>Total world</b>	115,950,851

Source: food and agriculture association (FAO) of the United Nations.

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Detailed US production of fresh tomatoes:

- U.S. fresh-market field-grown tomato planted acreage:
  - 2002: 131,800 acres
  - 2003: 125,600 acres
  - 2004: 130,700 acres
- Farm value of fresh-market field-grown tomato production:
  - 2002: \$1.253 billion
  - 2003: \$1.332 billion
  - 2004: \$1.342 billion
- U.S. fresh-market field-grown tomato production:
  - 2002: 3.959 billion pounds
  - 2003: 3.558 billion pounds
  - 2004: 3.611 billion pounds
- Fresh-market field-grown tomato production, top five States, 2004:
  - FL – 1.512 billion pounds
  - CA – 1.073 billion pounds
  - VA – 0.209 billion pounds
  - TN – 0.124 billion pounds
  - OH – 0.111 billion pounds

According to the National Agriculture Statistical Service (NASS), in 2004 the U.S. fresh market tomato production was valued at \$1.3 billion, second to lettuce with \$2.1 billion. However, in terms of pounds the total production has slightly decreased since 2002, and In terms of higher yields and

pounds produced, acres harvested, and higher season-average prices, Florida clearly outpaces California.

Florida and California are the two leading tomato suppliers; however California is the major producer between the months June and November. Mexico offers tomatoes between January and June. Shipments during 2004 were the highest of three years. Sales in both vine ripe and roma tomatoes increased. Sales of green tomatoes increased by 48 percent and 8 percent respectfully. The food industry however continues to buy field-grown tomatoes; they are easily stored and have a good life expectancy,

### PROCESSED TOMATOES:

	Area planted	Area harvested	Yield per acre	Production	Value per ton	Value total (1,000 dollars)
2003	310,030	293,920	33.41	9,819,710	58.70	576,441
2004	321,230	300,620	40.80	12,266,410	58.60	719,285
2005	285,940	282,040	36.17	10,200,120	61.00	622,143

Source: USDA

The production of processed tomatoes is an important market to the US agriculture and economy, due to the

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hurricanes of last year, a lot of crops were damaged and therefore lost, which caused the prices to go up. However from the table above, the production of processed tomato is still strong even though it has clearly decreased in 2005.

### Apparent Consumption

According to per capita disappearance data compiled by the U.S. Department of Agriculture's (USDA) Economic Research Service (ERC), both fresh and processed tomato demand have generally trended higher over the past two decades. Processed tomato use trended higher from 1920 until leveling in the mid-1990, while fresh tomato consumption continues to trend higher after bottoming out in the 1971.

Today, each man, woman and child in America consumes almost 80 pounds of tomatoes every year. Households are the largest consumers. Men and women over the age of 39 consume 50% of all fresh tomatoes. Teenage boys between the ages of 12 and 19 consume the largest consumption of ketchup. Companies are looking for new ways to help and lead consumers into purchasing tomatoes, a biotech firm in California has invented a technique that increases life expectancy for tomatoes and its has been approved by the FDA. Shelflife of tomatoes has increased resulting in a larger time frame to sell the product before it spoils.

## Statistics of Foreign Trade

### Fresh Tomatoes

International trade is an important component of the U.S. fresh-market tomato industry. Imports account for about one-third of U.S. tomato consumption, up from one-fifth in the early 1990s. The percentage of U.S. fresh tomato supply that is exported has remained at a relatively constant 7 percent since the 1980s. Over the past decade greenhouse/hydroponic products have made significant inroads into the U.S. fresh tomato retail market, with Canada's burgeoning hothouse tomato industry taking advantage and wresting market share from Mexico

- U.S. fresh-market tomato imports (field-grown and hothouse):
  - 2002: 1.895 billion pounds (Jan-Dec)
  - 2003: 2.071 billion pounds (Jan-Dec)
  - 2004: 2.054 billion pounds (Jan-Dec)
- U.S. fresh-market tomato imports (all) as percent of domestic use:
  - 2002: 32.4 percent
  - 2003: 36.5 percent
  - 2004: 36.3 percent
- U.S. fresh-market tomato imports (all) by country, 2004  
Top five sources:
  - Mexico— 1,716.8 million pounds (field and hothouse)

## Tomato

- Canada— 294.7 million pounds (virtually all hothouse)
- Netherlands— 25.5 million pounds (hothouse)
- Israel— 6.4 million pounds (hothouse)
- Spain— 5.4 million pounds (hothouse)

With the popularity of tomatoes increasing, the US has been importing more and more of the product. Mexico and Canada are responsible for covering more than 30% of the United States domestic use.

### Processing Tomatoes

Since 1991, the United States has been a net exporter of processed tomatoes and one of the top-five exporting nations (China, Turkey, Chile, and the European Union). US export and import volume for processed tomatoes

	Exports	Imports	Difference
2001	2,410,358	1,106,876	1,303,482
2002	2,458,251	1,516,724	941,527
2003	2,935,593	1,152,794	1,782,799
2004	2,989,809	1,282,717	1,707,092

From the table above, we conclude that the volume for export is growing at a faster rate than the volume of import. Export output has increased for 4 consecutive years, while imports increased from 2001 to 2002 and then decreased from 2002 to 2003 and later increased.\*

## Origin of Importations

### The 3 major sources of fresh tomato import

<b>Mexico</b>	\$750 million
<b>Canada</b>	\$257 million
<b>Netherlands</b>	\$53 million

### The 3 major sources of processed tomato import

<b>Canada</b>	\$60 million
<b>Italy</b>	\$43.4 million
<b>Mexico</b>	\$12.6 million

After implementation of NAFTA in 1994, imports from both Mexico and Canada increased tremendously. The fresh tomato production in the US being seasonal, Mexico is the predominant supplier in the winter, Florida tomatoes then cover the spring, with Canada supplying the imports during the summer.

The United States is a net exporter of processed tomatoes, but also relies on Canada, Italy, and Mexico for its supply of tomato sauce, paste, and ketchup.

## Market Characteristics

## Consumer Preferences

Tomatoes are second only to potatoes in both U.S. farm value and vegetable consumption. U.S. annual per capita use of tomatoes and tomato products has increased nearly 30 percent over the past 20 years, and is expected to reach a fresh-weight equivalent of 92 pounds per person in 2008. Processed tomato products, including items such as sauces, catsup, pastes, salsa, and juice, will account for about 81 percent of that total. ERS estimates suggest the largest processed use of tomatoes is for sauces (35 percent), followed by paste (18 percent), canned whole tomato products (17 percent), and catsup and juice (each about 15 percent).

Domestic use of processed tomato products surged heading into the 1990's but leveled off as the decade progressed. Domestic use averaged 75.2 pounds per capita during the 1990's-up 18 percent from an annual average 63.5 pounds during the 1980's. The increase is likely the result of continued expansion in food-service demand (food purchased in restaurants and fast-food establishment), especially for Italian and Mexican-style dishes. Some of the increase may also be due to rising public awareness of the health benefits of processed tomato product in the diet. Sales of tomatoes have remained stable because of an increase in sales of canned tomatoes. Salsa and Pizza have helped the canned tomato sector increase about 13% since 1985. People enjoy eating tomatoes in salad. Canned tomatoes are used for pasta, salsa, and pizza. Fresh tomatoes are favored more in the Northeast and the West than they are in the Midwest and South. Hispanic consumers consume the largest amount of

## Tomato

fresh-market tomatoes. Tomatoes are less important in the diets of non-Hispanic black consumers. Several medical studies in the 1990's have linked diets rich in tomatoes and tomato products to reduce the risk of various diseases. Tomatoes helps protect and helps combat cancer, lowers cholesterol, supports the immune system and helps shield the heart.

### Quality Standards

Standard tomato quality is primarily based on uniform shape and freedom from growth or handling defects. Size is not a factor of grade quality but may strongly influence commercial quality expectations.

**Shape** - well formed for type (round, globe, flattened globe, roma)

**Color** - Uniform color (orange-red to deep red; light yellow). No green shoulders.

**Appearance** - Smooth and small blossom-end scar and stem-end scar. Absence of growth cracks, catfacing, zippering, sunscald, insect injury, and mechanical injury or bruises.

**Firmness** - Yields to firm hand pressure. Not soft and easily deformed due to an overripe condition.

## Tomato

### Market Segments

The following findings are the conclusions of a survey conducted by the USDA regarding the consumption of fresh tomatoes and processed tomatoes across the United States:

1. The bulk of fresh and processed tomatoes were purchased at retail stores and considered as home foods. Catsup was the only tomato product that relied more heavily on the away-from-home market than the at-home market.
2. Fresh tomatoes were favored slightly more in the Northeast and the West and slightly less in the Midwest and South. Consumption of processed tomato products was strong in the West and Midwest and weakest in the South.
3. Hispanic consumers were the strongest consumers of fresh-market tomatoes. Compared with other consumers, tomatoes were discovered to be less important in the diets of non-Hispanic black consumers.
4. Per capita consumption of fresh and processing tomatoes increases as income rises. Households in the highest income bracket, with income greater than 350 percent of the poverty level, represented 39 percent of the U.S. population and consumed 44 percent of all fresh tomatoes.
5. Men and women over the age of 39 represent 39 percent of the population, yet they consume 50 percent of all fresh tomatoes. Teenage boys (12-19) have the highest per capita consumption of catsup.

From these important findings, a market segment could be identified.

### Acceptable Conditions

In all classes, subject to the special provisions for each class and the tolerances allowed, the tomatoes must be:

- Intact
- Sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded
- Clean, practically free of any visible foreign matter
- Fresh in appearance
- Practically free from damage caused by pets
- Practically free from pests
- Free of abnormal external moisture
- Free of any foreign smell and /or taste.

The development and condition of the tomatoes must be such as to enable them:

- To withstand transport and handling
- To arrive in satisfactory condition at the place of destination

## Tomato

**Size tolerance:** 10% by number or weight of tomatoes conforming to the size immediately above or below that specified, with a minimum of 33 mm for 'round' and 'ribbed' tomatoes and 28 mm for 'oblong' tomatoes.

### Presentation:

#### 1. Uniformity:

The contents of each package must be uniform and contain only tomatoes of the same origin, variety or commercial type quality and size (if sized). The visible part of the contents of each package must be representative of the entire contents.

#### 2. Packaging:

The tomatoes must be packed in such a way as to protect the produce properly. The materials used inside the package must be new, clean and of quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly paper or stamps, bearing trade specifications is allowed, provided the printing or labeling has been done with non-toxic ink or glue. Packages must be free of all foreign matter.

#### 3. Packaging:

Tomatoes must be presented as follows:

- i. as individual fruits, with or without calyx and short stalk
- ii. as trusses of tomatoes, i.e. the tomatoes are presented as whole inflorescence or part thereof each inflorescence or part thereof comprising of least the following number

of fruits: (a) three fruits (two fruits in prepackaging), or (b) in the case of trusses of 'cherry' tomatoes, six fruits (four fruits in pre-packaging).

#### 4. Optimum temperature:

Mature Green 12.5 - 15°C (55 - 60°F)

Light Red (USDA Color Stage 5) 10 - 12.5°C (50 - 55°F)

Firm-ripe (USDA Color Stage 6) 7 - 10°C (44 - 50°F) for 3-5 days

Mature-green tomatoes can be stored up to 14 days prior to ripening at 12.5°C (55°F) without significant reduction of sensory quality and color development. Decay is likely to increase following storage beyond two weeks, at this temperature. Typically 8-10 days of shelflife are attainable within the optimum temperature range after reaching the Firm-ripe stage. Short term storage or transit temperatures below this range are used by some in the trade but will result in chilling injury after several days. Extended storage with controlled atmosphere has been demonstrated.

#### 5. Ripening temperature:

18° -21°C (65 - 70°F); 90-95% R.H. for standard ripening 14° - 16°C (57- 61°F) for slow ripening.

## Tomato

### Competition

States	J a n	F e b	M a r	A p r	M a y	J u n	J u l	A u g	S e p	O c t	N o v	D e c
Canada												
Mexico	P	P	P	P	P	P						
Europe												

P: peak

Tomatoes are produced in Mexico all year around, with a peak season of 6 months between January and June.

In Canada, the production of tomatoes is limited to 5 months between June and October.

In Europe, it extends for a couple more months compared to Canada, which is from April to October.

### Demand Trends

#### Availability of tomatoes in the US

States	J a n	F e b	M a r	A p r	M a y	J u n	J u l	A u g	S e p	O c t	N o v	D e c
California						P	P	P	P	P		
Florida							P			P		
Michigan												
North Carolina												
South Carolina						P						
Virginia												

P: peak

The states in the table above are the ones that contribute somehow to the US production of tomatoes. Florida is a high producer of fresh tomatoes and has a low season in the summer between August and September. California is a big producer of processed tomatoes and is especially in peak between June and October.

## Tomato

## Prices

The U.S. Department of Commerce suspended an antidumping investigation involving fresh-market tomatoes from Mexico, by negotiated agreement, on November 1, 1996. The agreement set a minimum price (called the reference price) covering the majority of fresh-market tomatoes imported from Mexico. The intent of the agreement is to ensure there is no undercutting or suppression of fresh-market tomato prices in the United States. Fresh-market tomatoes cannot enter the United States at less than the established reference price. Subsequent amendments clarified and expanded original provisions. The tomato season is now split into two periods—each with a separate reference price. California and Baja, California, Mexico are covered from July 1 to October 22 (\$4.30 per 25-pound box), while Florida and Sinaloa, Mexico are covered from October 23 to June 30 with a higher floor price (\$5.81 per 25-pound box). The latter floor price was increased 2.9 percent on November 1, 2003 from the long-standing level of \$5.27 per box.

## Sales Promotion

Records from 2003-2004 states that sales promotions for tomatoes include merchandising, trade communication activities, technical assistance, retail and foodservice cooperative promotions, consumer research, consumer recipe brochures, food editor communications, and targeted advertising and public relations activities. California International Market Promotion for agriculture also funds tomato educational sessions and recipe contests. This educates individuals on the growth, uses, and nutritional facts of the vegetable. Recipe contests help give tomatoes new uses and encourage individuals to purchase the vegetable. There is also in store promotions, which gives samples and coupons to customers.

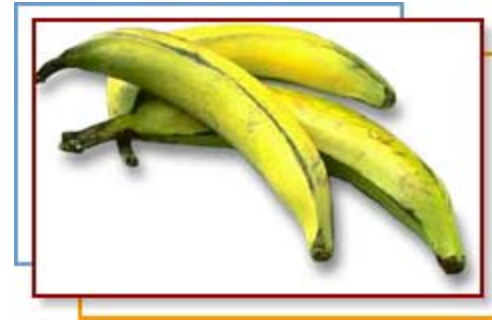
## Market Perspectives

Tomatoes will always have a large market. Tomatoes are one of the most common vegetables. The market of tomatoes will continue to increase. Restaurants continue to purchase tomatoes to serve their dishes. Catsup companies purchase huge amounts of tomatoes a year to make their finished product. Tomatoes are becoming more popular because of their health benefits to consumers. They prevent prostate cancer and are rich in vitamins and antioxidants.

# **Plantain**

## Plantain

## Product Description



The fruits vary in length from about 10 to 30 cm (about 4 to 12 in). The average weight of a bunch is about 11 kg (about 25 lb), but individual bunches often exceed 18 kg (40 lb). A stalk bears only once, dies down, and is replaced by sprouts, two or three of which are allowed to bear fruit.

Unlike the soft sweet bananas, plantains are starchy, hard, large, and used for cooking. The edible part of the banana contains, on the average, 75 percent water, 21 percent carbohydrate, and about 1 percent each of fat, protein, fiber, and ash.

When unripe, green plantains are similar to potatoes in its neutral flavor and texture. What are called yellow plantains are only slightly sweeter but still firm. The final stage of the cooking banana is when they are black, very soft and much sweeter, because of that they are used as a nutrition food for the elderly and infants since they are easily digested. The fruit of the plantain is grown in the tropical regions of the world such as Florida, Japan, Brazil, Egypt, the Canary

## Plantain

Islands...and has been used in different ways as different regions came up with different methods of cooking:

- Dried flour
- Drink (brewed into an alcoholic beverage)
- Chips (South America and India)
- Maduros (Cuba, Colombia, Puerto Rico, the Dominican Republic, and Nigeria)
- Tajadas (Venezuela, Panama, and Nicaragua)
- Plantain flower (Vietnam)
- Plantain Leaves (Venezuela and India)
- Plantain Shoot
- Tostones / Patacones (Colombia, Panama, and Venezuela)
- Yo-Yo (Venezuela)
- Chifles ( Ecuador)

## Statistical Data

## Production Data

There is no production of plantain in the US. However, from the data in the table provided below, we can conclude that the world production has been significantly increasing

**The world production: area harvested, yield, and production**

	Area harvested (hectare)	Yield (hectogram/ hectare)	Production (metric tons)
2003	5,176,720	61,641	31,909,948
2004	5,259,094	62,705	32,977,076
2005	5,290,237	63,330	33,502,921

About 40% of the world total production (7 million tones) comes from Latin America and the Caribbean. The annual production of plantain by country in that region is as follow:

- Colombia: 40.5%
- Ecuador: 12%
- Peru: 11.5%
- Venezuela: 7.7%
- Brazil: 4.2%

## Plantain

Mexico: 4.1%  
 Dominican Republic: 4.5%  
 Puerto Rico: 1%  
 Others: 14.5%

Source: International Network for the Improvement of Banana and Plantain  
[http://www.inibap.org/index.php/pdf/faobanana\\_en.pdf?page=19->musalac->musalac](http://www.inibap.org/index.php/pdf/faobanana_en.pdf?page=19->musalac->musalac)

## Apparent Consumption

There are no data available on the consumption of plantain in the US. But according to James Eckles, who has been in the agriculture business for over 30 years, US consumers have an increased interest in Hispanic foods and that could very much increase the consumption of plantain to increase as well.

## Origin of Importations

The U.S. 5 leading suppliers are:

1. Guatemala
2. Ecuador
3. Costa Rica
4. Colombia
5. Honduras.

## Statistics of Foreign Trade

The US imports by Qty and Val of plantain

	Imports-Qty (Mt)	Imports-Val (1000\$)
2001	216,894	94,947
2002	235,558	76,937
2003	253,383	95,247
2004	268,811	105,142

Source: FAO

The US has been importing more than one Billion dollars worth of plantains and bananas since the year 2000. Its increase has been very slow with tendencies to decline in the years 2003 and 2004 with a come back in 2005 and 2006. In 2005 the US imported a total of \$1,131,663,000 dollars with a predictive increase of a 4.84% in 2006.

## Market Characteristics

## Consumer Preferences

In many countries, plantains are most popular when their dried fruits are sliced, and then fried in oil and salt to be made into chips, or like French fries. The consumption of plantains went up about 50% since the 1980's, the per capita consumption (31.4 lbs) is higher than any other fruit crops. The plantain fruit is consumed differently around the world, however, according to James Eckles, Americans do not include it in their meals regularly yet; although, the tendency is to have it as a side dish when going to Hispanic restaurants.

## Quality Standards

As far as quality is concerned, plantains must be free of pests and diseases on arrival to the final buyer. They must also be free of severe handling defects such as bruising, scars and others.

**Shape** – somehow round

**Color** – green

**Appearance** – must be hard to the touch and with all fruit edges visible and well defined

**Size** - must have a minimum size required by the market defined as caliper (thickness) and finger length. The minimum caliper allowed, measured in the middle of a finger, should be 38 mm (1.5", caliper 16 on the "Chiquita" system, caliper 48 on

## Plantain

the “Dole” system). The minimum finger length should be 21.5 cm (8.5”), although the market considers a length of 23 cm (9”) a commercial advantage.

### Market Segments

A report by the Produce marketing Association (PMA) divides the consumption of fresh produce according to sex, age, the composition of the family and the region of origin of consumers. The report found that women consume more than men. The age groups between the ages of 35 and 44 consume more than any other group, as well as families with several children. As far as region of origin, major consumers of fresh produce are found in the North-Central and North-East regions of the US. The same report mentions that Hispanics are the major consumers of fruits in the US, in comparison to the Anglosaxon and Black populations. Hispanics spend more than US\$200 per year buying fresh fruits. The Black population a little bit more than US\$100. The Anglosaxon population has a level of expenditures in the middle of the Hispanic and Black populations. By region, consumers in the North-East and the West Coast have the highest expenditures buying fresh fruits. However, the Southern population spends the least on this consumer category. The above information indicates that the major impact in developing a market for new fresh products or specialty products such as plantains will be obtained with Hispanic women, between 35 and 45 years old, having several children and living in the North-East or the West Coast of the US.

Plantains are now found in all supermarket stores in the East Coast and the West Coast and in the majority of stores in the Midwest. All major supermarket chains carry plantains on a regular basis, servicing Hispanic consumers that are the major buyers of this product. However, mainstream consumers are finding plantains (cooking bananas) more appealing as a fresh food or vegetable and are increasing sales of this item in all food stores. As the Hispanic population continues to grow, this trend will automatically create a greater demand for produce products in which plantains are allocated. According to the PMA plantains are in the top 5 products that Hispanics demand more from the produce products variety creating a bright future for Latin American suppliers.

Source: [www.usda.com](http://www.usda.com)

### Acceptable Conditions

For presentation purposes, packing must be done using individual plantains (loose finger pack) placed in Kraft cardboard boxes containing 50 lbs (22.73 Kg) of product. Individual plantains must be protected against rubbing damage inside the box by thin liners of Kraft paper. In addition and at packing time, it is important to place the best fingers on the upper layers of the box to achieve an attractive presentation. The cardboard boxes must have markings with the minimum information required by the US authorities:

## Plantain

- ❑ Product ("Plantain")
- ❑ Country of origin
- ❑ Exporter (address and phone number)
- ❑ Municipality where product is produced and packed
- ❑ Importer (address and phone number)
- ❑ Net weight of product

The unit for logistical handling in transportation and distribution of plantains is a wooden pallet made according to specifications for resistance and wood type demanded by the US authorities and the market. This pallet must be 48" x 40" (1.20m x 1.00 m) in size and as a handling unit, must have a base of 6 plantain boxes and a height of 8 boxes, for a total of 48 boxes per pallet. A set pattern for demand seasonality is not evident for plantains. They are available to consumers all year around and can be used in the kitchen at any time in any season. Demand seasonality, if there is one, would be related more to supply patterns and price fluctuations than consumer preferences for a given season.

## Competition

Since there is no production of plantains in the US, the competition is between the main producers cited in the production section.

## Demand Trends

Plantains are available year around in the super market. Plantains are easy to store and when not grown in the US they are imported from Guatemala, Ecuador, Costa Rica, Colombia, and Honduras, therefore making plantains available throughout the years.

## Prices

Pricing is directly correlated to the supply through out the year. High prices are at the end and the beginning of the year during a period of low supplies following the production peak in the fall season from Colombia and Guatemala. Low prices in the spring and early summer respond to high import volumes from Ecuador. High prices appear again in late summer and early fall, following the low import volumes after the surge in Ecuador in the spring. Low prices in November and early December are due to the high volumes from Colombia and Guatemala in the fall.

## Sales Promotion

There is no information regarding this commodity, however according to James Eckles, plantains are usually promoted through retail stores. Supermarkets, restaurants, and fast-food establishments all advertise offering samples, coupons, and other types of promotions including trade shows.

## Market Perspectives

Hispanics are the largest minority and are the biggest consumers of plantains. Plantains are a specialty product that has been widely accepted. Plantains continue to have a steady market and will slowly see growth. According to James Eckles, a vegetable expert, a few years ago you had to go to a Latin supermarket to purchase plantains, now plantains are being sold everywhere. Cultures did not use any kind of banana as a side dish instead it was viewed as a fruit.

# **Yellow Onions**

## Product Description



Onions belong to the lily family of plants; they have a distinctive pungent odor and strong flavor. Onions are very popular worldwide for culinary and medical purposes. It is believed that they are effective against many diseases such as colds, diabetes, heart disease, osteoporosis...around the world; they are also used to heal blisters and boils, and to treat topical scars. Because of their large cells, onions have been very useful in school science laboratories.

Onions are mainly divided into two categories:

- Green onions: small, harvested before the bulb has matured, green top.
- Dry onions: mature, are harvested when their shoot has died, and categorized as fresh (Spring/Summer) or storage (Fall/Winter) onions

## Yellow Onions

FRESH (SWEET) ONIONS	STORAGE ONIONS
High water content	High sulfur content
Served either raw or cooked for their sweet taste	Used in cooking for their flavorful taste
Can be grilled or roasted	Can be fried, sautéed, or baked
Added to salads, hamburgers, sandwiches	Added to casseroles, quiche, pasta sauces, soups, stews, pizza
Thin, light colored skin	Several layers of dark paper like skin
Availability: March to August (limited because they don't store well)	Availability: year long, but plentiful from September through April
Types: Maui, Oso, Spring...	Types: red, white, or yellow, with yellow being the most harvested

### What makes the yellow onion so popular?

- It's an all purpose onion
- It has a very strong and rich taste
- Good for caramelizing
- Available through the year
- Affordable

Approximately 87 percent of the onions produced in the United States are yellow, with about 8 percent red onions and 5 percent white onions. There are more than 4,000 different varieties of spring/summer fresh onions grown in the United States; almost 90 percent of these are yellow varieties. Therefore, to get a good understanding of United States' yellow onions market, it would be fairly accurate to look at the overall onions' statistics.

## Statistical Data

### U.S. Production Data

Onions are grown in more than 20 states, literally border to border and coast to coast. Leading U.S. onion production areas are Idaho-Eastern Oregon, Washington and California. U.S. farmers plant approximately 142,000 acres, producing around six billion pounds of onions (excluding dehydration production) each year. The National Onion Association estimates 1,000 growers produce onions in the United States. The U.S. onion industry accounts for 2.5 percent of the world onion acreage and over 7 percent of the world onion production.

## Yellow Onions

		Spring*	Summer			US total
		1	Non-storage* 1	Storage* 2	Total	
<b>Area Planted (acres)</b>	03	36,000	22,700	114260	136,960	172,960
	04	39,900	23,900	115800	139,700	179,600
	05	40,000	20,400	108820	129,220	169,220
<b>Area harvested (acres)</b>	03	32,500	22,200	111390	133,590	166,090
	04	35,700	23,200	110050	133,250	168,950
	05	35,300	19,800	106420	126,220	161,520
<b>Yield per acre (cwt)</b>	03	312	522	464	473	442
	04	337	521	535	533	491
	05	318	563	483	495	457
<b>Produc.</b>	03	10,133	11,588	51,642	63,230	73,363
	04	12,031	12,098	58,878	70,976	83,007
	05	11,243	11,140	51,386	62,526	73,769
<b>Value per cwt</b>	03	29.70	15.60	9.73	10.9	13.70
	04	19.70	14.60	7.28	8.70	10.50
	05	22.60	13.80	11.40	11.90	13.70
<b>Total value</b>	03	300736	180296	448242	628538	929,274
	04	237359	176355	363625	539980	777,339
	05	252594	154179	513596	667775	922,406

\*1: primarily fresh

\*2: includes some quantities of storage crop onions harvested but not sold because of

shrinkage and loss

source: USDA

From the table above, we conclude that the US total production of onions has increased between 2003 and 2004, but has suffered a decrease in the last year (2005).

## Apparent Consumption

Onions represent the third largest fresh vegetable industry in the United States. The U.S. per capita consumption of onions is around 21 pounds per year. This translates to over 380 semi-truck loads of onions used in the United States each day. Onion consumption has risen over 70 percent in the last two decades, from 12.2 pounds per person in 1983 to an estimated 21 pounds per person in 2005. The average annual onion consumption calculates to approximately 13.67 pounds of onions per person across the world. Libya has the highest consumption of onions with an astounding average per capita consumption of 66.8 pounds.

## Statistics of Foreign Trade

At least 175 countries grow onions. According to the United Nations Food and Agriculture Organization, there are an estimated 6.7 million acres of onions in the world, producing 105 billion pounds of onions each year.

Approximately 8 percent of this global onion production is traded internationally. Leading onion production countries are China, India, United States, Turkey and Pakistan.

## Yellow Onions

The US exports and imports by Qty and Val of onion

	<b>Imports- Qty (Mt)</b>	<b>Imports- Val (1000\$)</b>	<b>Exports- Qty (Mt)</b>	<b>Exports- Val (1000\$)</b>
2001	286,969	182,696	334,643	113,836
2002	270,083	147,374	306,729	104,429
2003	293,175	183,061	328,849	135,186
2004	312,632	213,007	301,967	124,359

Annual onion exports during the last five years have ranged from 620 to 763 million pounds. Leading export countries for U.S. onions are Canada, Japan, Mexico and Taiwan. Imports during the last five years have ranged from 466 to 689 million pounds.

## Origin of Importations

Leading countries importing onions into the U.S. are Mexico, Canada, Peru and Chile.

## Market Characteristics

## Consumer Preferences

According to the National Onion Association, onions are most often used to enhance flavors in a wide range of recipes - casseroles, pizzas, soups, stews and salads. Onion rings, onion blooms, other onion appetizers, caramelized onions and classic French onion soup remain popular restaurant uses for onions. As a garnish, onions are used in sandwiches, wraps and in classic Mexican cuisine as well. An estimated 15 to 18 percent of onions are processed for use in prepared food items such as salsa, soups, and appetizers. Onions are also processed for fresh consumption. Peeled, sliced, diced and chunked onions go directly to the foodservice industry.

## Quality Standards

Yellow onions are most popular within Hispanic consumers and are increasing in market share due to ethnic demand. Onions also have natural qualities that make them attractive to consumers, particularly in today's health-conscious market. Additionally, onions are playing a greater role in the diets of many Americans after receiving considerable attention for their healthful, functional benefits. Onions can aid in prevention of diseases due to their antioxidant content.

## Yellow Onions

**Shape** – fairly well shaped.

**Color** – gold

**Appearance** – free of cuts and bruises. Short necks and dry, papery outer skins.

**Firmness** - firm, hard (no soft or spongy spots)

## Market Segments

According to the USDA, onions place fifth among all US vegetables in per capita. Onions are very popular and used by most people in preparing a great number of dishes. There is a strong demand within vegetarians, Asians, Hispanics, and Indians between others. Onions are widely consumed by all cultures because it is used as inexpensive condiment that enhances flavor to dishes, therefore having a vast market. Onions are shipped August-April from Oregon. Storage onion varieties are produced during the late summer and fall. This makes up three-fourths of the US market.

## Acceptable Conditions

Onions are mature and ready to harvest when their tops fall over. If bulbs are going to be stored following harvest, they should be allowed to dry and cure before harvesting. However, onion bulbs should not be left in the ground until tops dry completely or bulbs are likely to develop roots, which will decrease their market value.

Proper storage is critical in maintaining high quality onions. Onions should be stored in a cool, dry, well ventilated building. Air temperature should be 40 to 45 F with a relative humidity of 64 percent. The ventilation system should provide about 1.5 cubic feet of air per minute for every cubic foot of onions. Onions stored in this manner may be kept in good condition for many months.

## Competition

According to the USDA, the United States is the world's third-largest producer of onions with 6% of the 111 billion pounds grown. The major two competitors of the US are:

- China: 31% of the world production
- India: 10% of the world production

## Demand Trends

Market trends for yellow onions continue to increase and supplies are good. Prices are higher than last year's, however it still remains a cheap vegetable. Sales for yellow onions never decreases, they remain stable or increase. Yellow onions are the second most common onion, the first being the white onion.

## Yellow Onions

# Prices

According to the National Onion Association the annual value of the U.S. onion crop is nearly \$1 billion at the farm gate and \$4-5 billion at retail. Following there will be a table that provides more detailed information of prices on the major producing states

Vegetables for Fresh Market: Marketing Year Average Prices, by State and United States, 1999-2004

Commodity and State	1999	2000	2001	2002	2003	2004
	<i>Dollars per Cwt</i>	<i>Dollars per Cwt</i>	<i>Dollars per Cwt</i>	<i>Dollars per Cwt</i>	<i>Dollars per Cwt</i>	<i>Dollars per Cwt</i>
Spring Onions						
AZ	11.40	5.80	8.00	8.35	9.89	8.80
CA	11.90	10.60	13.50	14.20	22.90	15.10
GA	27.10	26.00	27.50	32.20	34.30	23.50
TX	17.40	17.20	18.50	21.40	38.10	22.60
Total	17.30	16.60	18.30	20.00	29.70	19.70
Summer Onions Non-Storage						
CA <sup>1</sup>		12.00	13.50	12.90	13.70	13.20
NV	8.50	15.50	12.00	13.00	16.00	16.00
NM	16.00	9.25	14.40	12.50	14.50	12.20
TX	22.00	23.20	20.20	22.20	24.60	24.10
WA	24.40	22.10	19.40	23.90	33.80	23.00
Total	15.90	13.10	14.50	14.00	16.20	14.80
Summer Onions Storage						
CA <sup>2</sup>	7.53	7.98	7.26	7.27	7.54	7.90
CO	11.20	13.40	12.40	14.40	15.00	12.20
ID	5.10	9.40	6.90	9.30	11.30	6.80
MI	10.00	12.50	12.20	12.50	14.50	11.50
MN <sup>3</sup>	6.00	7.00	7.35	7.60	9.25	
NY	12.20	13.50	9.70	12.40	13.30	12.10
OH <sup>3</sup>	8.00	12.00	15.00	13.70	14.60	
OR						
Malheur	4.60	10.60	6.20	9.38	11.10	6.90
Other	5.60	8.20	6.25	6.66	7.45	7.20
UT	5.80	9.30	7.70	8.40	10.40	6.60
WA	6.35	8.14	8.20	12.30	13.50	7.85
WI	8.00	7.40	8.00	8.25	8.80	7.85
Oth Sts <sup>4</sup>						12.90
Total	7.13	9.41	7.94	9.80	10.70	8.35
Total Summer	8.18	10.00	9.14	10.60	11.80	9.62
US	9.74	11.20	10.70	12.10	14.50	11.30

<sup>1</sup> Estimates began in 2000.

<sup>2</sup> Includes fresh and processed.

<sup>3</sup> 2004 data not published to avoid disclosure of individual operations.

<sup>4</sup> 2004: MN and OH.

## Sales Promotion

Sales promotion for yellow onions was not specified, however promotion for onions include advertising sales, promotional events, and passing out brochures. Producers are trying to advertise it through cooking contests.

## Market Perspectives

The market for yellow onions continues to grow because of its inexpensive price. Households as well as the hospitality industry will continue to purchase yellow onions to meet the increasing demand in the food industry. Yellow onions are used in many dishes; it's used as a spice in many countries, making it a familiar vegetable for most immigrants in the United States. In today's health conscious environment many individuals are turning to onions because their fat free and contain many vitamins and antioxidants. Vegetarians, Asian, and Latin are currently the largest consumers.

# **Sweet Potato**

## Sweet Potato

## Product Description



Sweet potato (*Ipomoea batatas*) is a sweet and starchy crop plant. The leaves and shoots of sweet potato are often eaten as greens. In the United States sweet potatoes are known simply as yam. Others argue they are not related in any way.

The plant is an herbaceous perennial vine which is heart shaped and grows medium sized sympetalous flowers. The roots are edible, and have smooth skin. Sweet potatoes are native to the Americas and have existed for more than 5000 years. They have also spreader into the Caribbean. The crop is now cultivated in tropical and warm temperate regions or where there is simply enough water to support their growth. The leaves and shoots are considered somehow important but not as much as the starchy tuberous roots which are rich in dietary fiber, vitamin A, vitamin C, and vitamin B6. The use of sweet potato varies, they can be boiled, fried, or baked depending on the dish prepared, they can also be processed, and acquired for industrial use:

## Sweet Potato

- Flour
- Industrial starch
- Industrial alcohol
- Candied sweet potato
- Animal feed
- Potato chips

Sweet potatoes have been classified into seven major varieties:

- Jersey
- Kotobuki (Japanese)
- Okinawan (purple)
- Papa Doc
- Beauregard
- Garnet
- Jewel

## Statistical Data

According to 2004 FAO statistics, China is the leading producer of sweet potato with a production of 105,000,000 tonnes from 49,000 km<sup>2</sup>. The total world production is 127,000,000 tons.

Between 1999 and 2001 U.S. sweet potato growers produced a total of 13.5 million cwt from 90,500 acres. Cash receipts from sales averaged \$214 million during this time frame. The sweet potato industry is concentrated around the southeastern states. North Carolina, (37%) Louisiana, (24%) and California (18%) are the three main producers in the United States. Mississippi makes up 13% while Alabama accounts for 3%. Production in 2001 was the highest since 1965. Only 1% of sweet potato consumption in the United States comes from imports.

### The 2005 US production, acreage, and yield

	Acreage Harvested (thousand acres)	Yield per Acre (units)	Production (thousand units)
2003	92.6	172	15,891
2004	92.8	174	16,112
2005	87.8	179	15,747

Source: NASS

Between 2003 and 2004 the production of sweet potato had increased by 2%, only to decrease by the same percentage in 2005.

## Sweet Potato

Decrease in production for 2006 is also forecasted, since Louisiana is an important producer with 24% of total US production, hurricane Katrina would have impacted farmers in that state, however we still don't know how the salt water has effected them.

Export sales totaled \$14 million in 2001. Imports only totaled \$4 million. The U.S. consumption of sweet potatoes totaled 1.2 billion pounds between 1999 and 2001.

## Apparent Consumption

The consumption of sweet potato has decreased since the 1970's from an average of 4.7 pounds per person per year to 4.1. For the last few years, it has increased again and remains somehow steady:

Year	Pounds per person per year
2002	3.8
2003	4.7
2004	4.7
2005	4.5

## Statistics of Foreign Trade

The US exports and imports by Qty and Val of sweet potato

	Imports- Qty (Mt)	Imports- Val (1000\$)	Exports- Qty (Mt)	Exports- Val (1000\$)
2001	6,160	4,781	21,671	13,764
2002	6,593	3,676	23,764	15,046
2003	4,964	2,749	28,846	20,614
2004	5,141	3,965	29,155	22,883

Source: FAO

Since 2001, the export of sweet potato has been increasing significantly while the import has been decreasing.

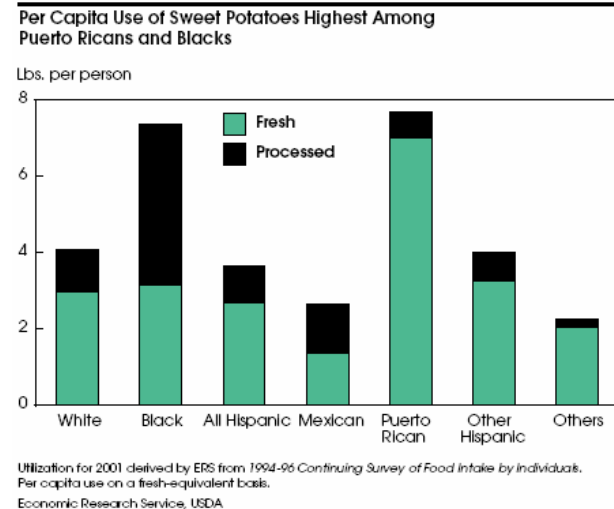
## Origin of Importations

According to the USDA report on sweet potatoes only "few imports enter the continental United States, with most volume (97 percent in 2001) moving directly from the Dominican Republic into Puerto Rico".

# Market Characteristics

# Consumer Preferences

The South accounts for 42% of fresh market sweet potato and 54% of processed consumption. Consumers in the west eat the fewest sweet potatoes, while the South consumes the most. Men 60 years of age consume 16% of the total sweet potato consumption, which would be 10.5 pounds. Women are the second largest group of consumers which account for 7.1 pounds. Consumers enjoy candied sweet potatoes as a side dish. Puerto Ricans and blacks consume more sweet potatoes than any other races. Puerto Ricans and blacks tend to eat it fried. Since Japan produces huge amounts of sweet potato, they have also introduced it to Americans by offering it fried.



## Sweet Potato

The demand for sweet potatoes is highest during Thanksgiving. Sweet potatoes represent the typical American family and a tradition at the dinner table. Consumers also enjoy them as chips, because they have less fat than regular potato chips. People are becoming more health conscious and sweet potatoes have fewer calories than regular potatoes. Consumers enjoy the flavor of sweet potato while still cutting back on calories. People purchase sweet potatoes throughout the year; the demand for vegetable continues to increase. In the United States we prefer yellow or orange sweet potatoes because of the source of vitamin A. Sweet Potatoes are a natural antioxidant and anti-diabetic. Potatoes and sweet potatoes are direct competition to one another.

## Quality Standards

Sweet potatoes are growing in popularity as the nutritious facts are becoming more known among Americans, they are rich in vitamins and contain a low amount of carbohydrates.

**Shape** – short, blocky, tapered ends

**Appearance** – smooth, with thin skin

**Taste** – sweet

**Color** – deep orange

**Firmness** – sound, firm roots

## Market Segments

According to the USDA, The sweet potato ranks seventh on the world's list of most important food staples after rice, wheat, corn, among others.

The following conclusions were reached using a census from the USDA:

1. The south accounts for 35% of the nation's population, but consumes 42% of fresh market sweet potato and 54% of processed sweet potato
2. The per capita consumption in the South was estimated to be 5.7 pounds, in the Midwest 4.3 pounds, in the Northeast 3.9 pounds, and in the West 2.6 pounds.
3. Men 60 years and older account for only 7% of the population but consume 16% of all sweet potatoes (10.5 pounds).
4. Women in the same age group are the second largest group consumers (7.1 pounds).
5. A taste of sweet potato is acquired with maturity.

From these conclusions; a market segment can be determined. In the future years more health conscious people will introduce sweet potatoes into their diets. Baby food companies are also taking advantage of the benefits of the vegetable and are including it in many of their products.

## Sweet Potato

### Acceptable Conditions

**Availability:** through the year, best between October and January.

**Storage:** Fresh sweet potatoes generally do not store well, except under ideal conditions, and bruised ones rapidly deteriorate. In a dry, dark, cool (55 degrees F.) place, they can last up to three to four weeks.

### Competition

North Carolina, Louisiana, and California are the leading competitors for Sweet potato in the United States. The vegetable also grows in the Caribbean; however the US only imports 1% of the US sweet potato consumption. Over 95 percent of the global sweet potato crop is produced in developing countries, where it is the fifth most important food crop in terms of fresh weight. More than 133 million tons are produced per year in more than 100 countries. Asia is the world's largest sweet potato-producing region, with 125 million tons of annual production. China, at 117 million tons, supplies about 80% of the world's production, making it the leading supplier of sweet potatoes in the world.

Source: consultative group on international agriculture research CGIAR

### Demand Trends

Prime season for fresh sweet potatoes is from October to January but they are available sporadically throughout the year. They are also readily available canned and frozen year-round

## Sweet Potato

### Prices

Prices on average have gone up 33 cents between 1970 and 2001. The price of sweet potatoes averaged \$16.10 per cwt during the 1999-2001 seasons. In September 2002 the index of producer prices for sweet potatoes averaged 8% below a year earlier.

### Sales Promotion

More restaurants are incorporating the vegetable in their menus. Industries want customers to look beyond holidays and think of sweet potato as an everyday food. Producers want to increase consumer recognition and demonstrate the nutritional values of the vegetable.

Introducing sweet potato fries and chips is already opening the eyes to many who don't enjoy eating vegetables. The industry is also improving the storage and handling techniques which ensure safer and fresher vegetables. Sweet potatoes are also promoted through trade shows, cooking shows, and other promotional events.

## **Market Perspectives**

The market for sweet potato is seeing slow growth. Many people do not like the way it looks, instead they choose to eat potatoes. In recent years the food industry has attempted to inform the public of its benefits. Sweet potatoes are a holiday tradition; however the food industry wants the public to view it as an everyday low fat vegetable. It is being offered at more restaurants and people are slowly becoming more curious about it. Experts have hopes that the vegetable will continue to have growth and acceptance within all cultures. Health conscious individuals and Americans are the largest consumers for the product.

## Distribution Channels

Tomatoes as well as yellow onions, plantains and sweet potatoes together with many other produce commodities are distributed through four primary marketing channels on its way from the grower-shipper to final consumer-grower-shippers, wholesalers, retailers, and consumers (fig. 2). In addition to these four major channels, produce also moves through export and import channels and through direct markets that include farm stands, farmers' markets, and mail order companies. Not all fresh fruits and vegetables move through each channel. For example, some imported fruits and vegetables are shipped directly to wholesalers, bypassing U.S. grower-shippers altogether.

### **Grower-Shippers:** Harvest, Package, and Ship Produce

After harvesting, fresh produce moves through various handling and packing activities performed either by a produce shipper or by the grower. Grower-shippers own the packing sheds that assemble, wash, and pack produce. A grower-shipper may handle produce bought from other growers, along with his or her own crops

### **Wholesalers:** Deliver Produce to Individual Stores and Restaurants

Grower-shippers serve a number of domestic produce customers, including wholesalers, self-distributing retailers, foodservice firms, and direct markets. Wholesalers serve as the next vertical stage in produce distribution. There are two basic types of wholesalers-merchant wholesalers and brokers.

## Distribution Channels

The majority of wholesalers are merchant wholesalers who take title to the product that they handle. Brokers do not take ownership of the produce but rather serve as an intermediary on behalf of either a grower-shipper attempting to sell produce or a wholesale or retail buyer of produce. Although wholesale brokers still serve an important role in the produce market channels, they have declined in number, and their share of total wholesaler channel sales has declined as well.

Merchant wholesalers consist of general-line grocery wholesalers, general-line foodservice wholesalers, and specialized fresh fruit and vegetable wholesalers. General-line grocery wholesalers procure grocery products, both food and nonfood, for individual stores or smaller retail chains that are too small to own and operate producebuying offices, warehouses, and trucking fleets. General-line foodservice wholesalers serve foodservice establishments such as restaurants, hospitals, schools, and hotels and handle products specifically for foodservice use. Some of the largest foodservice wholesalers, Sysco and Alliant for example, carry a broad range of products including paper supplies and equipment. Foodservice wholesalers handle a growing share of the produce flowing through the system and are an integral part of the produce marketing channel.

In addition to general-line grocery and foodservice wholesalers, specialized produce wholesalers procure and deliver fresh fruits and vegetables to retail stores and foodservice operators. They are often based at produce terminal markets located near large population centers. Specialized produce wholesalers handle the largest share of produce moving through merchant wholesalers.

**Retailers:** Acquire More Produce Directly From Grower-Shippers

Retail food stores provide the overwhelming majority of produce purchased for at-home consumption. The Census of Retail Trade defines food stores to include supermarkets and general-line grocery stores, convenience stores, delicatessens, and smaller food stores that specialize in products such as fruits and vegetables, meat, retail bakeries, candy, and dairy. While the number of these small specialty shops is extensive, they account for only 5.3 percent of produce consumed in the United States.

In the early 1990's, another retail phenomenon started emerging. Alternative retail outlets, other than grocery stores, started selling significant amounts of food to consumers. Some of these nontraditional outlets included mass merchandisers, such as [Wal-Mart](#) and [Kmart](#), which started opening supercenter stores that housed clothing, small appliances, and other mass-merchandise and supermarket goods, including food, under one roof. In addition, warehouse club stores, such as Sam's and [Costco](#), provided consumers with bare bones store services, but with tremendously discounted prices on goods. In 1992, these mass merchandisers and warehouse stores contributed an estimated \$0.8 billion in produce sales.

**Foodservice:** Accounts for Growing Share of Produce Sales

Foodservice establishments are another important outlet for produce sales to consumers. The foodservice industry is highly fragmented with operations ranging from individual restaurants to fast food chains to hospital cafeterias. When produce is purchased from foodservice, it is almost always

## Distribution Channels

purchased as part of a complete meal, already transformed substantially from individual commodities to a cut, primped, and prepared dish.

### **Producer-Consumers**

A minor but increasingly important share of fresh produce sales is transacted directly between the producer and consumer. Farm stands and stores, pick-your-own operations, roadside stands, farmers' markets, and mail order sales are ways growers market their produce directly to consumers. Direct sales benefit many smaller growers that are located near population centers. These direct sales are usually on a cash basis and are, therefore, extremely difficult to estimate.

## Commercial Practices

### Procedures to Make Orders

In the general Market, when a demand of a product is greater than the supply, those who produce that product have the advantage of setting up the price and costs, however that is not the reality when dealing with produce items such as tomatoes, sweet potatoes, plantains and yellow onions.

There is a saying in the market that says “Sell it or smell it” which mean that if you do not sale the produce at a certain amount of time you will most like end up with a huge smelly and rotten cargo. That is why precautions must be taken with appropriate preventive measures for harvesting are not taken such as choosing bunches based on their age and the thickness of the produce.

If a new producer of any of this product decides to enter the market, he most first realize that trust and strong relationships determine how business is done. That is why new suppliers must at first take a great share of the risk of the business and later the receivers in the U.S. market tend to shift that the other way around. This risk involve selling FOB and making contributions to working capital in the form of packing materials and covering the costs to import and handle the product at the port of destination

## Commercial Practices

### Systems and Terms of Payment

“Payment terms vary according to the commercial relationship or to the type of transaction negotiated. On consignment, there is usually an advance when the product arrives in good condition at the port of destination and a final liquidation takes place 21 to 30 days after arrival. If the quality on arrival is not good, there is no payment in advance and the final liquidation could be delayed 45 days or more. Sometimes, these transactions are guaranteed through a “stand-by” letter of credit or with some other type of financial document” (www.pfid.msu.edu)

Payments of documentation can be received in advance when dealing with an FOB transaction but later receive the rest of the payment when the cargo arrives in the agreed conditions to the port of destination. Basically when dealing with exports and imports letters of credit and other financial documents are always required and even more when new partnerships are being born.

### Transportation

Most of the transportation for the produce industry is by done by ship. It is the most inexpensive way of transportation when the shipping heavy load and of great volume. However according to the expert interviewed he says that when dealing with tomatoes the most cost and time efficient way is to ship it

is by air, however no further information was found to back up this statement.

### Packing, Types Used: Crates and Labels

The following information is the packing standards according to the Pennsylvania State University (<http://agmarketing.extension.psu.edu/Wholesale/ProdPkgGuide.html>):

#### TOMATOES

Tomatoes should well-formed and free from cracks, scars and blemishes. Pick at pink to orange color and ship when orange to firm red. They should be grade for quality and size. Sizes are small 2 1/8 to 2 9/32 in. diameter, medium 2 9/32 to 2 17/32 in., large 2 17/32 to 2 28/32 in. and extra large 2 28/32 in. and up. Pack in 25 lb. tomato or 1/2 bu. produce box. Cherry tomatoes are packed in 12 pt. flats. Temperature: 55-70 F Relative humidity: 85-90%. Cooling: Room cooling.

#### PLANTAINS:

For presentation purposes, packing must be done using individual plantains (loose finger pack) placed in Kraft cardboard boxes containing 50 lbs (22.73 Kg) of product. Individual plantains must be protected against rubbing damage inside the box by thin liners of kraft paper. In addition and at packing time, it is important to place the best fingers on the

## Commercial Practices

upper layers of the box to achieve an attractive presentation.

### **YELLOW ONIONS:**

Pull onions when the neck is medium sized. It should be blanched 2-3 in. above the root. Tie 6 to 9 in a bunch and pack 24 bunches in a 1/2 bu. box or 40 to 48 in a 1 1/9 bu. box. Temperature: 32 °F. Relative humidity: 90-95%.  
Cooling: Pack in ice or hydro cool

### **SWEET POTATOES:**

Sweet potatoes should be well-shaped and firm. They should be graded for size and quality and packed in 1/2 bu. or 1 1/9 bu. box. Temperature: 55-60 °F. Susceptible to chilling injury. Relative humidity: 85-90%

## Market Access

## Regulations

All of sweet potato, tomato, plantain, and yellow onions imports are regulated by:

- The Food and Drug Administration (FDA), which is part of the Department of Health and Human Services and the Public Health Service - [www.fda.gov](http://www.fda.gov)
- Centers for Disease Control and Prevention (CDC) - [www.cdc.gov](http://www.cdc.gov)
- The US Department of Agriculture (USDA) - [www.usda.gov](http://www.usda.gov)
- Environmental Protection Agency (EPA) - [www.epa.gov](http://www.epa.gov)
- US Customs Service, US Department of Treasury - [www.customs.ustreas.gov](http://www.customs.ustreas.gov)
- Federal Trade Commission (FTC) - [www.ftc.gov](http://www.ftc.gov)

Imports regulations depend on product and country where the crop is coming from. A phytosanitary certificate from the exporting country must come with the shipment coming into the United States. The official will determine if this can be determined to the U.S. and the requirements must be met before exporting to the United States. This process is in

## Commercial Practices

hands of the USDA Animal and Plant Health Inspection Service. Sweet potatoes tomatoes, plantains, or yellow onions being imported or exported from the United States must meet requirements relating to size, grade, quality and maturity. An inspection must be given by the USDA's agricultural marketing services. The Environmental Protection Agency has standards for pesticides, herbicide and fungicides used in the fumigation of agricultural products. United States Customs reviews all documentation for the shipment against requirements and will not let release goods until all requirements are met. United States Customs Service gives the final approval for importation of all products.

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**Importers Lists and Distribution Networks****Importers List and  
Distribution Networks**

The following list is for distribution companies that deal with tomatoes, sweet potatoes, plantains and yellow onions:

Agricultural Marketing Services, Inc.  
MIAMI, FLORIDA USA

Atlantica Food Imports, Inc.  
MASPETH, NEW YORK USA

Maurice A. Auerbach Inc.  
SOUTH HACKENSACK, NEW JERSEY

Best Produce  
OZONE PARK, NEW YORK

Brooks Tropicals, Inc.  
HOMESTEAD, FLORIDA

Carb/Americas, Inc.  
POMPANO BEACH, FLORIDA USA 149375

Caribbean Fruit Connection Corporation  
MIAMI, FLORIDA

Caribbean Produce Exchange, Inc.  
SAN JUAN, PUERTO RICO

C-Brand Tropicals, Inc.  
MIAMI, FLORIDA

Coosemans-Denver, Inc.  
DENVER, COLORADO

## Importers Lists and Distribution Networks

Crystal Valley Foods  
MIAMI, FLORIDA

Cuba Tropical, Inc.  
NEW YORK, NEW YORK

Cuba Tropical, Inc.  
MIAMI, FLORIDA

Delica North America LLC  
TORRANCE, CALIFORNIA

Delmonte Fresh,  
CORAL GABLES, FLORIDA

Florida Fresh, Inc.  
HOMESTEAD, FLORIDA

Golden Crown Produce, Inc.  
MIAMI, FLORIDA

Hunts Point Tropical  
NEW YORK, NEW YORK

J & J Foods, Inc.  
PHILADELPHIA, PENNSYLVANIA

Kendall Foods Corporation  
HOMESTEAD, FLORIDA

Kurtz Produce Inc.

ARISS, ONTARIO CANADA

M & M Farm, Inc.  
MIAMI, FLORIDA

Mesa Produce, Inc.  
MESA, ARIZONA

New York Produce, Inc.  
NEW YORK, NEW YORK

Olmart Produce Corp.  
MIAMI, FLORIDA

Platinum Produce, Inc.  
LOS ANGELES, CALIFORNIA

Power Foods International, Inc.  
MIAMI, FLORIDA

Premium Produce  
NORTH YORK, ONTARIO CANADA

R.M. Produce Distributors, Inc.  
POMPANO BEACH, FLORIDA

Southcoast Produce Co.  
DALLAS, TEXAS

Stelo Corporation  
DAVIE, FLORIDA

## Importers Lists and Distribution Networks

Terrapin Produce, Inc.  
POMPANO BEACH, FLORIDA

Tropic Trading Co.  
VALLEY CENTER, CALIFORNIA

Tropical Wholesale Produce, Inc.  
CHICAGO, ILLINOIS

United States Produce Brokers, Inc.  
NEW YORK, NEW YORK

W. P. Produce Corp.  
MIAMI, FLORIDA

## Upcoming Commercial Events

## Upcoming Commercial Events

The Produce Marketing Association (PMA) will be holding a fresh produce show in Monterey, California where the vegetables sited in this research will be showing. The show will be held July 14 through 16, 2006. This trade show is called Foodservice Conference & Exposition and as stated in PMA's website, this show has being held since 1981, and it has grown in size, stature, and reputation, and remains the only event dedicated to fresh produce in the foodservice industry.



PMA will be holding another trade show in Santiago, California, October 20 through 24, 2006 called PMA-Fresh Summit. PMA avows that the Fresh Summit show is the world's largest fresh fruit and vegetable event. For further questions call 1-302-738-7100, write to 1500 Casho Mill Road,

## Upcoming Commercial Events

Newark DE 19711 USA, or visit their web site at [www.pma.com](http://www.pma.com).

The following table sites some produce related events that will take place in the United States during the year 2006.

It is very beneficial for anyone trying to enter the U.S. market to attend some of this trade shows to further understand the U.S. market, make new contacts, establish or meet new distributors and find new customer.

Date	Organisation/Event	Address/location	Contact person
August 18 <sup>th</sup> , 2006	Southeast Produce Council's and United Fresh Fruit & Vegetable Association's "Educational Road Show"	Columbia, S.C	Terry Voorhees Ph: (813)633-5556 Fax (866) 653-4479, <a href="http://www.seproducecouncil.com">www.seproducecouncil.com</a> .
September 29 <sup>th</sup> , 2006	Southeast Produce Council's and United Fresh Fruit & Vegetable Association's "Educational Road Show"	Young Farris, Ga.	Terry Voorhees Ph: (813)633-5556 Fax: (866) 653-4479 <a href="http://www.seproducecouncil.com">www.seproducecouncil.com</a> .
September 29 <sup>th</sup> ,	Southeast Produce	Brasstown Valley	Terry Voorhees

2006	Council's fall conference	Resort, Young Harris, Ga.	Ph: (813)633-5556 Fax (866) 653-4479 <a href="http://www.seproducecouncil.com">www.seproducecouncil.com</a> .
April 26-29 <sup>th</sup> , 2006	MARYLAND International Fresh-cut Produce Association Annual Conference and Trade Show.	Baltimore Convention Center, Baltimore, MD.	Martha Krafton Ph: (703) 299-6282 E-mail: <a href="mailto:mkrafton@fresh-cuts.org">mkrafton@fresh-cuts.org</a> <a href="http://www.fresh-cuts.org">www.fresh-cuts.org</a>
May 6-9 <sup>th</sup> , 2006	ILLINOIS United 2006 Produce Expo & Conference	McCormick Place, Chicago, IL	United Fresh Fruit & Vegetable Association Ph: (202) 303-3400 <a href="mailto:info@uffva.org">info@uffva.org</a> <a href="http://www.uffva.org">www.uffva.org</a>
December 5-7 <sup>th</sup> , 2006	Great Lakes Fruit, Vegetable and Farm Market EXPO	<u>DeVos Place Convention Center</u> 303 Monroe Avenue NW in downtown Grand Rapids, MI.	Ph: : 616-742-8010

## Conclusions and Recommendations

The produce and food industry is a market that is directly affected by the growth of the population. In Latin America vegetables like the ones discussed in this project are very much demanded on every kitchen and table due to tradition and culture. We conclude that the increasing amount of immigration that we have witness and will witness in the following years, will generate a create a bigger market benefiting those small, but willing to grow, business trying to get into the U.S. market with their products. They must first understand how business work and how and important and essential it is to be honest and organize.

One thing is certain, if the central or South American countries do not take advantage of this great opportunity with the resources and the investment necessary some other countries will surely take control and the profits that comes with it.

## References

## References

1. Food and agriculture association (FAO) of the United Nations. [www.fao.org](http://www.fao.org)
2. National Agriculture Statistical Service (NASS)
3. United States Department of Agriculture
4. International Network for the Improvement of Banana and Plantain  
[http://www.inibap.org/index.php/pdf/faobanana\\_en.pdf?page=19->musalac->musalac](http://www.inibap.org/index.php/pdf/faobanana_en.pdf?page=19->musalac->musalac)
5. Food and Agriculture association
6. United States Department of Agriculture  
[www.usda.gov](http://www.usda.gov)
7. National Onion Association  
[www.onions-usa.org](http://www.onions-usa.org)
8. United States Department of Agriculture
9. National Onion Association
10. Food and Agriculture association
11. National Agriculture Statistics Service  
[www.usda.gov/nass](http://www.usda.gov/nass)
12. United States Department of Agriculture  
[www.usda.gov](http://www.usda.gov)

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Research (CGIAR)  
[www.cgiar.gov](http://www.cgiar.gov)
15. Partnership for Food Industry Development  
[www.pfid.msu.edu](http://www.pfid.msu.edu)
16. Pennsylvania State University  
<http://agmarketing.extension.psu.edu/Wholesale/ProdPkgGuide.html>