

Agriculture-Dependent Economic Development for Western New York State



Prepared by
Informa Economics Inc. • Moran, Stahl & Boyer, LLC

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Executive Summary

Executive Summary

Objectives

- The overall objectives of this work are to provide Buffalo Niagara Enterprise (“BNE”) with materials, information and guidance that will lead to the development of new and existing agricultural-related businesses in Western New York. For that purpose, a multi-phase approach was put in place.
- Key questions that are addressed in the present report are as follows:
 1. What is the agriculture and agriculture-dependent economic situation in Western New York State?
 2. What are the potential agriculture-dependent opportunities and their required attributes/resources?
 3. How well does Western NYS compare with peer regions?
 4. What techniques should be used to attract and stimulate agriculture-dependent industry growth within the region?

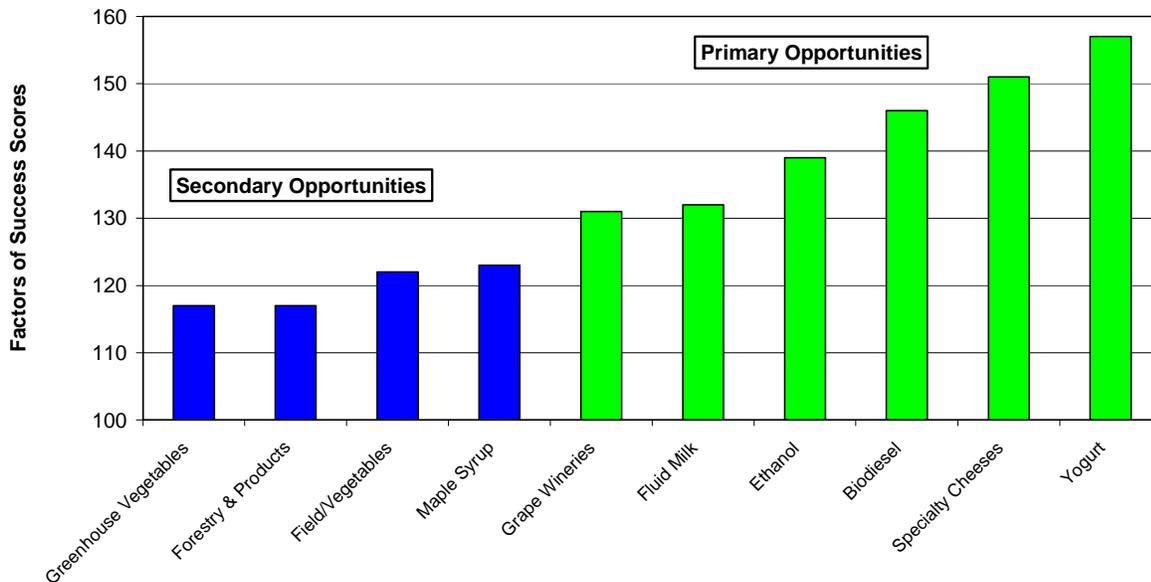
Methodology

- In order to assess Western New York agriculture-dependent economic situation and identify opportunities within the region, Informa Economics (“Informa”) and Moran, Stahl & Boyer, LLC (MS&B) conducted interviews and focus groups with industry leaders in the region. Ten different agricultural opportunities were chosen as the most desirable for economic development consideration in the region:
 - > Dairy: fluid milk
 - > Dairy: Specialty cheeses
 - > Dairy: Yogurt
 - > Field Vegetables
 - > Forestry & wood products
 - > Greenhouse vegetables
 - > Maple syrup
 - > Renewable energy: biodiesel
 - > Renewable energy: ethanol
 - > Vineyards: wineries

- In order to identify which opportunities were the most desirable, Informa and MS&B developed a detail profile of each of these sectors. A “success matrix” was subsequently created to quantify the opportunities. The matrix considered nineteen factors/variables such as sector growth rate, capital investment requirements and proximity to demand markets.
- Weighted scores were then compiled for each of the sectors and ranked. A summary of the results is found on the following page. It should be noted that the ranking of the ten sectors into primary and secondary opportunities is a generalized proxy for economic development consideration. In other words, all ten sectors have been selected for their potential development potential, however, the primary sectors should be the initial areas of development by BNE.

Results

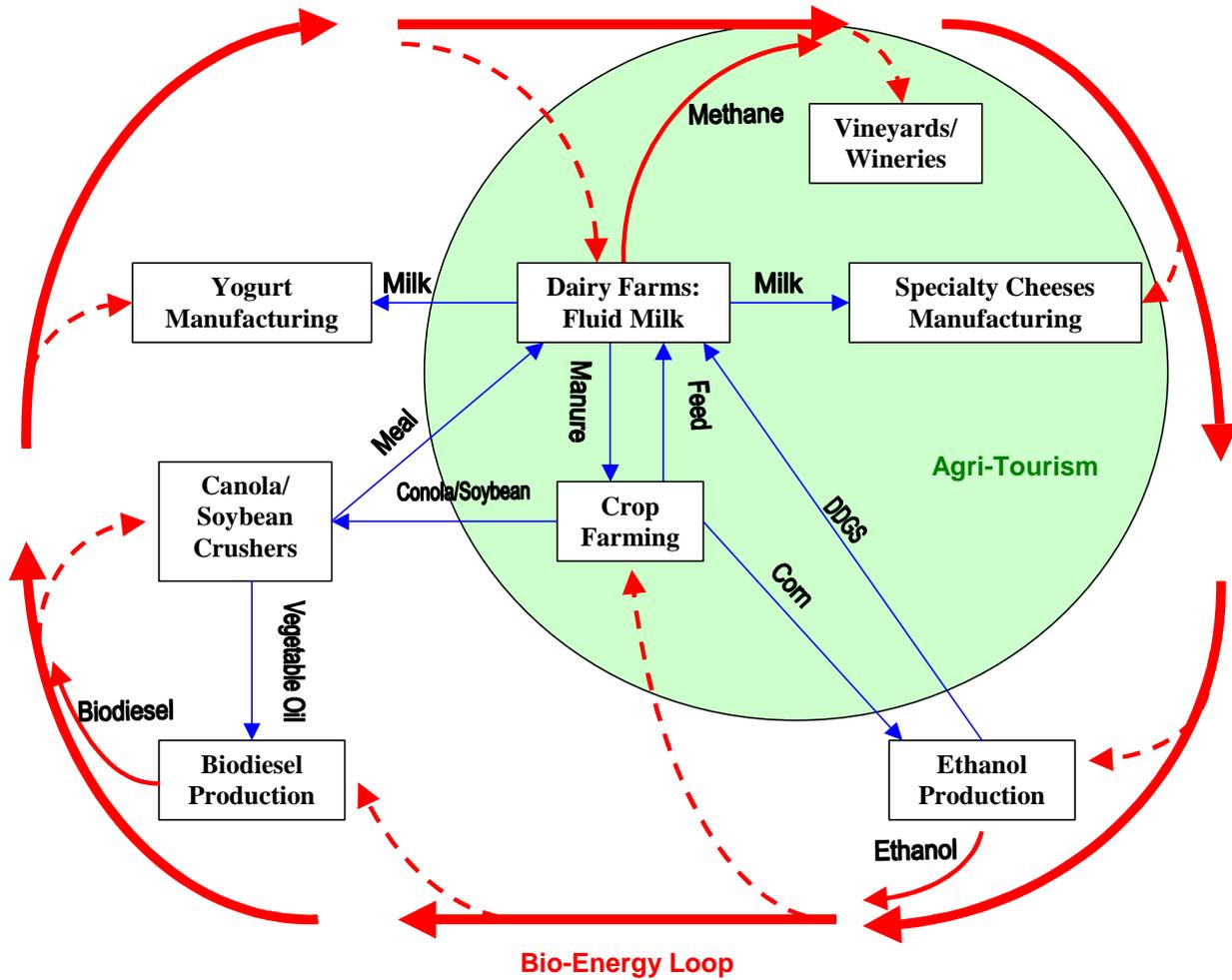
Summary Results of the Factors of Success Matrix Analysis



Source: Informa Economics

- It is essential to stress that all these sectors should not be considered as individual opportunities but rather as a network of opportunities since, through their interactions, each sector can stimulate growth within the other sectors.
- Each of the primary opportunities were benchmarked with peer regions in order to identify major strengths, weaknesses, opportunities, and threats, which enabled Informa and MS&B to develop techniques to attract and stimulate players within these sectors.

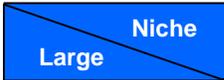
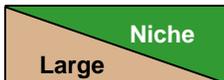
Interaction of Selected Agricultural Sectors in Western New York*



* These are the primary sectors of opportunities for economic development in Western New York as identified by Informa Economics and Moran, Stahl & Boyer.

Source: Informa Economics

Primary Opportunities Overview

Segment	External Recruitment	Marketing Initiatives	Internal Investment
Dairy: Fluid Milk			
Dairy: Specialty Cheeses			
Dairy: Yogurt			
Renewable Energy: Biodiesel			
Renewable Energy: Ethanol			
Vineyards: Wineries (Large & Niche)			

Secondary Opportunities Overview

Field Vegetables			
Forestry & Products			
Greenhouse Vegetables			
Maple Syrup			

High Level of Importance =



Medium Level of Importance =



Low Level of Importance =



Primary Opportunities Overview

Segment	External Recruitment	Marketing Initiatives	Internal Investment
Dairy: Fluid Milk	<ul style="list-style-type: none"> • Contact large banks/investors outside of the region to support the expansion of fluid milk production • EU or Canadian producers might be willing to relocate/expand operations into Western NY 	<ul style="list-style-type: none"> • Explore new models of niche production such as fluid organic milk • Promote discussions between producers and processors to stimulate expansion 	<ul style="list-style-type: none"> • Expand existing operations/capacity of current producers through lending (e.g., loan programs) to stimulate expansion in the fluid milk market
Dairy: Specialty Cheeses	<ul style="list-style-type: none"> • Identify successful specialty cheese producers in WI, MI and CA that could be interested in expanding into Western NY 	<ul style="list-style-type: none"> • Support small/niche players/processors via the state's agri-tourism initiatives • Build bridges to large and diverse population centers in the east 	<ul style="list-style-type: none"> • Support growth in new/emerging processors via existing institutions such as Cornell and local economic development groups • Increase/encourage the production of specialty cheeses at the local level
Dairy: Yogurt	<ul style="list-style-type: none"> • Look for large processors 	<ul style="list-style-type: none"> • Build on strong consumer demand trends and the proximity to large population centers on the East Coast 	<ul style="list-style-type: none"> • Support growth in new/emerging processors via existing institutions such as Cornell and local economic development groups • Try to build/leverage local opportunities first • Support the increase in fluid milk production by local producers
Renewable Energy: Biodiesel	<ul style="list-style-type: none"> • Identify potential investors/owners with the capital to develop the biodiesel sector in Western NY • Identify specialty chemical companies that are involved in the production of downstream biobased products 	<ul style="list-style-type: none"> • Benefits of location to demand centers for biodiesel • Enter into dialogues with public transit authorities to include biodiesel in their fleets 	<ul style="list-style-type: none"> • Smaller capital investments required for biodiesel operations compared to ethanol • Identification of primary feedstocks and potential opportunities/players
Renewable Energy: Ethanol	<ul style="list-style-type: none"> • Identify potential investors/owners with the capital to develop the ethanol sector in Western NY, this will likely come from external players 	<ul style="list-style-type: none"> • Benefits of location to demand centers for ethanol and access to feedstocks (i.e., corn) via rail and port facilities • Benefits of being able to maintain the balance of corn/feedstocks prices and availability relative to DDGS 	<ul style="list-style-type: none"> • Larger capital investments will likely focus attention on outside sources of capital investors/investment
Vineyards: Wineries (Large & Niche)	<ul style="list-style-type: none"> • Large: Focus on attracting large, wineries (with annual sales above \$10 million) that have demonstrated scale economies • Both: The new USDA facility in Geneva can be used to entice/attract new development 	<ul style="list-style-type: none"> • Both: Develop a more recognizable brand for Western NY • Niche: Assist in more effective Internet marketing • Niche: Support agri-tourism opportunities that are linked to NY wineries • Both: Address the unfair trade practices of Canada, especially in Ontario • Both: Take advantage of proximity to NYC markets 	<ul style="list-style-type: none"> • Niche: Vine replacement program • Niche: Loan program to build additional and upgrade existing wineries (includes equipment & facilities) • Niche: Support the development and expansion of NY niche (with annual sales below \$3 million)

Secondary Opportunities Overview

Segment	External Recruitment	Marketing Initiatives	Internal Investment
Field Vegetables	<ul style="list-style-type: none"> • Find new owner for facilities vacated by Birds Eye for processed vegetables • Large capital investment required; look to potential processing firms in California 	<ul style="list-style-type: none"> • Assistance in marketing to national brokers 	<ul style="list-style-type: none"> • Support local vegetable growers with the continuation of the Birds Eye plant • Look at other value-added opportunities beyond frozen processing, such as fresh cut products and wet salads
Forestry & Wood Products	<ul style="list-style-type: none"> • Attract high-end value-added furniture manufacturing operators 	<ul style="list-style-type: none"> • Leverage the large supplies of diverse world-class hard woods in Western NY 	<ul style="list-style-type: none"> • Maintain and support the continued development of hardwood natural resource base (via state forestry initiatives)
Greenhouse Vegetables	<ul style="list-style-type: none"> • Look to attract well established large national or international greenhouse operators to the area 	<ul style="list-style-type: none"> • Leverage knowledge base of the agricultural and horticultural expertise in the region to develop the greenhouse industry • Build on strong consumer demand trends for fresh and organic vegetables • Leverage the freight differential to the East Coast between the fresh vegetable growing region on the West Coast 	<ul style="list-style-type: none"> • Explore the potential for integrating multiple systems, such as utilizing methane capture from the dairy industry to develop alternative green energy in order to offset the cost of natural gas that is required to heat the greenhouses
Maple Syrup	<ul style="list-style-type: none"> • The development focus should remain with local firms rather than trying to attract external investors/participants 	<ul style="list-style-type: none"> • Need to develop overall brand and specific niches for Western NY • Assist in more effective Internet marketing efforts 	<ul style="list-style-type: none"> • Small loan program to start up additional sugaring operations • Cooperative development activities

- Based on markets and strategies identified, Informa and MS&B developed a list of agriculture-dependent companies that fit the profile of likely candidates for expansion or development of businesses in Western New York.

Purpose of Project and Scope and Outline of Activities

Project Objectives . . . Addressing the Following Questions:

1. What is the agriculture and ag-dependent economic situation in Western NYS?
2. What are the potential opportunities?
3. How well does Western NYS compare to its peer locations?
4. Where in the region should opportunities be placed?
5. What techniques should we use to attract additional businesses?
6. How should we measure our progress?

Project Scope and Strategy

- Phase I – Assess Situation and Identify Potential Opportunities
 - > Data profile of current situation
 - > Gather feedback from area stakeholders
 - > Identify potential opportunities
 - > Define resource requirements
 - > Develop cost model for different location

- Phase II – Opportunity Assessment
 - > Benchmark peer regions
 - > Develop location requirements within Western NYS

- Phase III – Marketing/Business Attraction Strategy
 - > Identify marketing options and develop communications tools
 - > Define specific companies with potential interest in Western NYS
 - > Identify potential opportunities
 - > Define objectives and milestones for success

**Global, National and
State/Local Overview of the
Agricultural Economy,
Including a Review of
Key Trends**

Global Agriculture Overview: Reality Check

- Kraft just announced that it would cut about 8% of its workforce and close 20 plants, a move to boost its restructuring plan (01-30-06)
- ConAgra is now executing a similar restructuring plan.
- U.S. demographics are slow growing.

National Agriculture Overview: Conventional Dairy Products

- **Cheeses:** commercial cheeses (e.g., mozzarella, cheddar) annual rate of consumption will slow to 1%-2%, specialty and artisan cheeses (e.g., Hispanic, artisan) will grow at much faster rates 3%-5%.
- **Fluid Products:** fluid milk per capita consumption will continue to gradually decline. Modest growth opportunities center around flavored and organic drinks and the use of milk for value-added processing activities such as cheese manufacturing.

National Agriculture Overview: The Organic Connection

- Dean Foods reports that their organic dairy product line should grow at a minimum of 10%/yr for the next 10 years. This is exceptional growth in the food industry.
- Dairy Foods magazine estimates that natural/organic sales grew 18% in 2002, the organic market was \$626 million and the natural market was \$983 million.

National Agriculture Overview: The Farm Bill

- Three fundamental policy changes last three decades
 - ❖ De-emphasis of public stockholding policies--1985
 - ❖ Termination of supply-acreage controls-1996
 - ❖ Emphasis on direct payments—1998 & 2002
- Currently facing a new driver
 - ❖ Renewable Fuels Revolution

National Agriculture Overview: The Farm Bill

- The Two Primary Factors to Affect the Debate
 1. Shift in US/Global Competitiveness
 - ❖ Thirty years ago expected world cropland to decline, believed market expansion depended on technology.
 - ❖ That outlook partly wrong, world added net 77 mil ha crop area, 10% increase (gross increase was larger; 124 mil ha in 15 countries, offset losses in developed areas, Former Soviet Union & elsewhere).
 - ❖ Crop area in Latin America increased 31 mil ha.
 - ❖ By contrast, declined 4.6 mil ha in US -4%.
 - ❖ Sharply shifted export market competitiveness, US share of production falling in soybeans, wheat, other crops while holding corn share - where US technology is strongest!
 2. Push for Expanded Renewable Energy Markets
 - Four Forces
 - ❖ Reduce energy dependence
 - ❖ Improve air quality
 - ❖ Strengthen farmer/producer income
 - ❖ Reduce greenhouse gas accumulation

National Agriculture Overview: The Farm Bill

- Two New Factors to Affect the Debate
- Big spending bills face increasing scrutiny
- Standard log-rolling package increasingly frayed
 - ❖ Commodity supports for farmers; feeding programs for urban groups; conservation programs for environmentalists. Will this work once again?
- Will there be a new bidding war to support programs?
 - ❖ Administration will support a bill; has declining political capital
 - ❖ Social activists will support—if strong feeding programs included
 - ❖ Farm groups will support—but must deal with
 - Inter-commodity warfare could weaken chances
 - Sugar versus the world
 - Interregional dairy wars; expanding to include MILC
 - Cotton and rice vs the Midwest
 - Environmentalists vs commodities
 - Fruits and vegetables vs commodities
 - Is there a unifying concept
- Can program structure survive? Should it?
 - ❖ Administration considered proposal for an all-green box program
 - ❖ Shifted in favor of less dramatic change

National Agriculture Overview: Support for the Renewable Energy Sector, 2005 Energy Policy Act

Energy Policy Act mandates 7.5 billion gallon biofuels consumption by 2012

- Requires an increasing amount of renewable fuels in gasoline:
 - ❖2006: 4.0 billion gallons;
 - ❖2007: 4.7 billion gallons;
 - ❖2008: 5.4 billion gallons;
 - ❖2009: 6.1 billion gallons;
 - ❖2010: 6.8 billion gallons;
 - ❖2011: 7.4 billion gallons; and
 - ❖2012: 7.5 billion gallons.

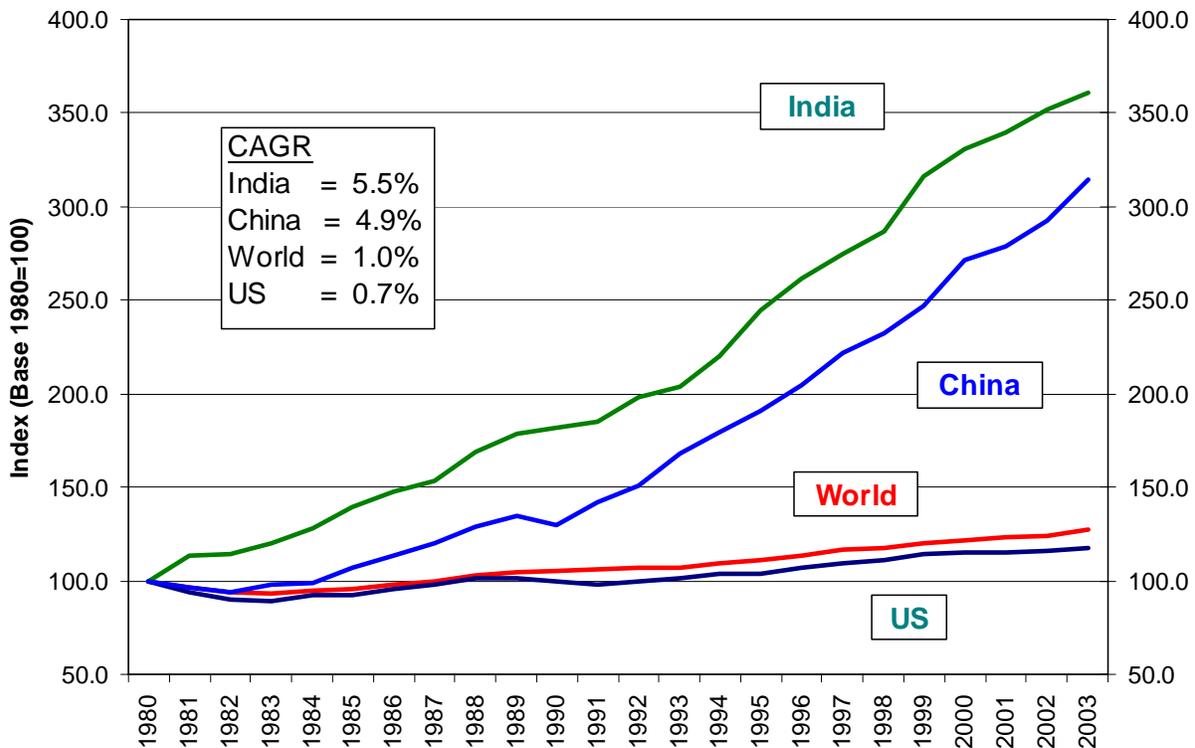
- Sets minimum requirements; can be exceeded by market volumes

- Biodiesel counts toward the RFS along with ethanol

- Credit trading system; each physical gallon of cellulosic or waste-derived ethanol receives 2.5 gallons of credits toward the RFS

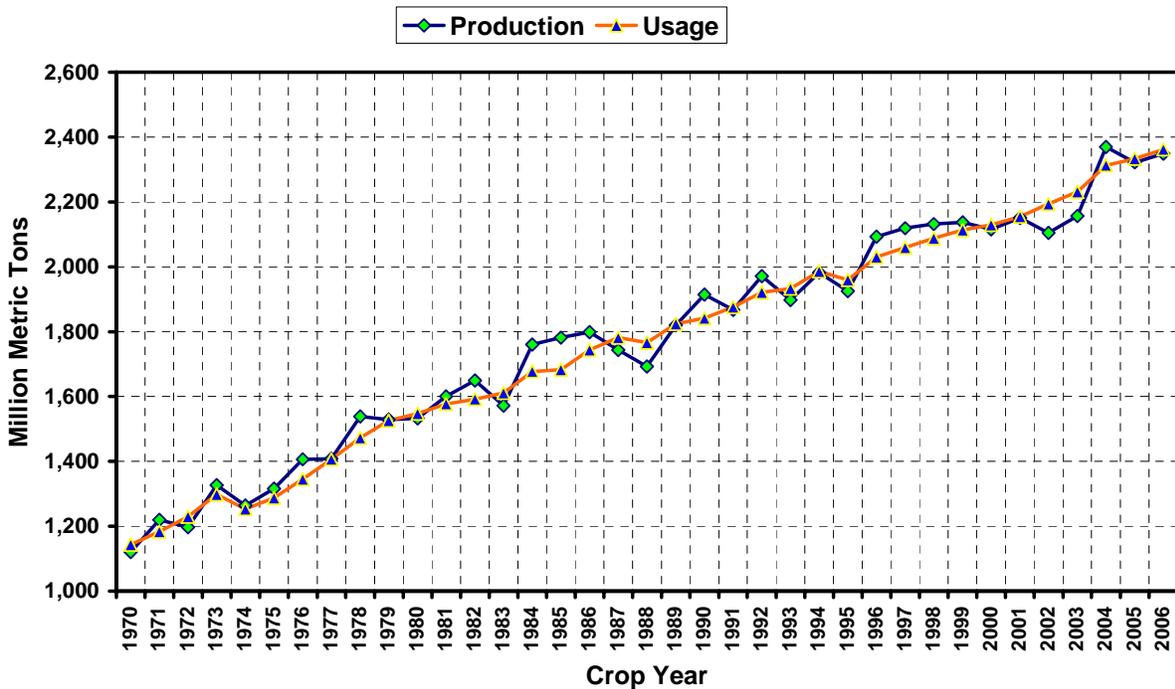
- Ethanol Industry Capacity (Renewable Fuels Association)
 - ❖4.8 billion gallons as of September 2006
 - ❖3.0 billion gallons under construction

World Petroleum Consumption – Indexation of Barrels of Oil Consumed Daily



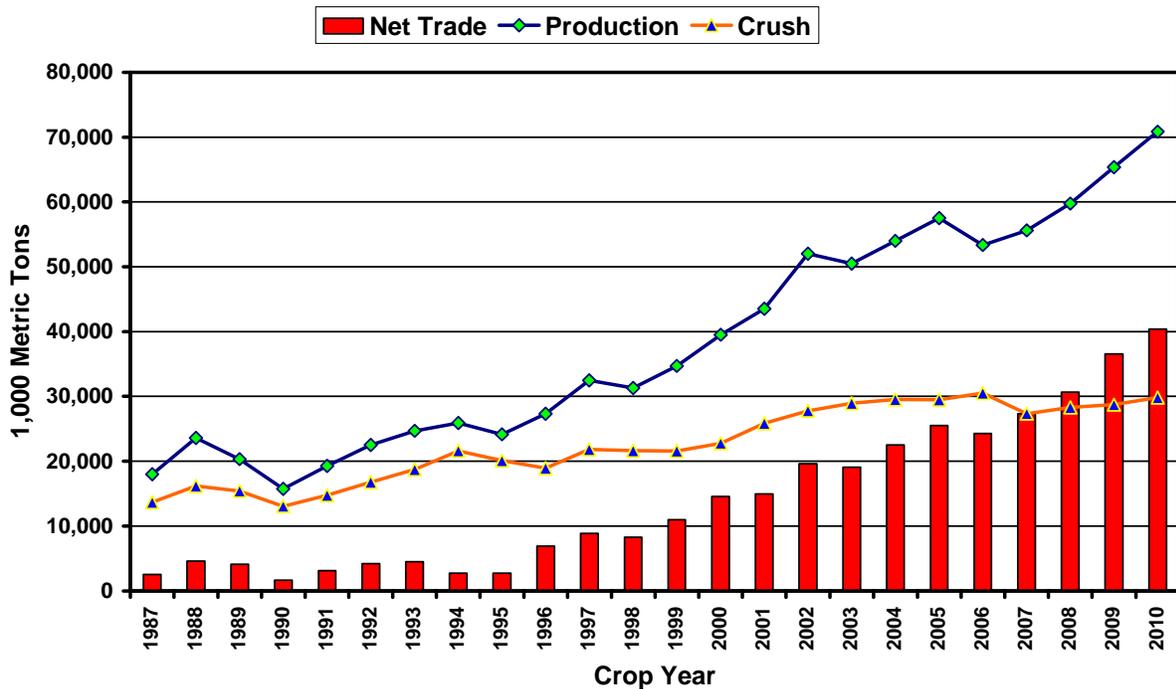
- As the global economy grows, especially in developing countries such as India and China, the demand for fossil based fuels has expanded rapidly. Over the last two to three years the rate of increase for the demand for oil has outpaced the rate of supply, which has led to higher energy prices.
- The countries of India and China have experienced a compound annual growth rate (CAGR) of 5.5% and 4.9% since 1980, this compares to a CAGR of only 0.7% for the US.

Global Grain Prod. & Consumption



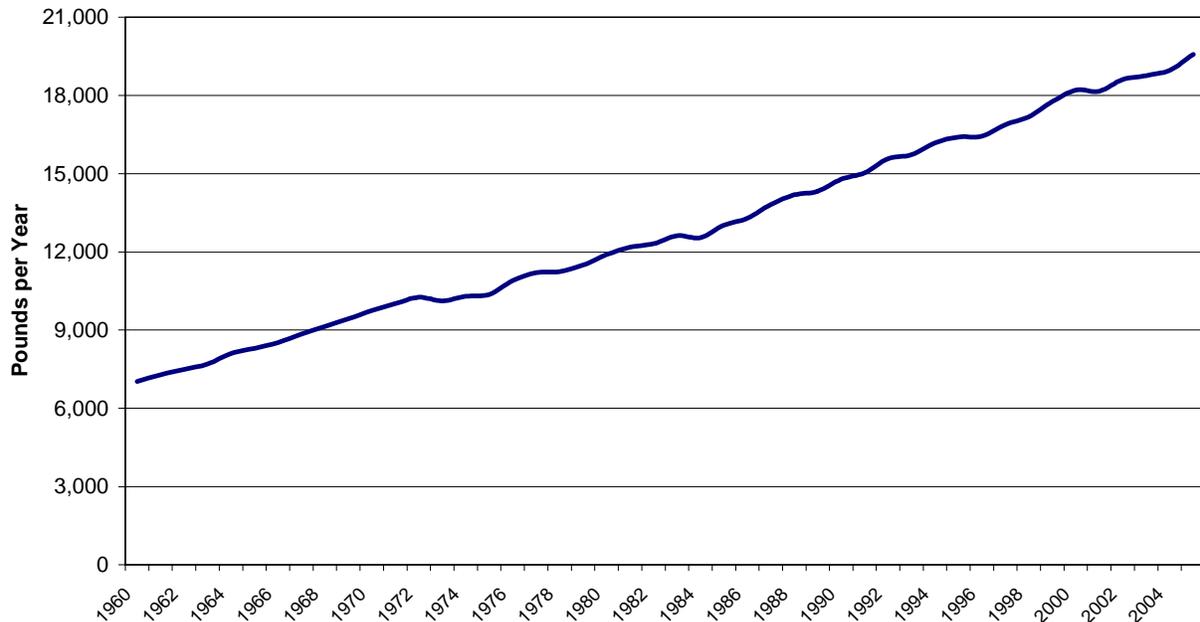
- The production of grains globally, has risen steadily over the last three to four decades. This has been a function of the global growth in standards of living which translates into greater demand for meat which requires larger volumes of feed grains.
- This has occurred as a result of increased land coming into production (e.g., more acreage from Brazil and Argentina) and improvements in crop inputs.
- Advancements in technologies has translated into higher yields for most major crops.

Brazil Soybean Production & Use



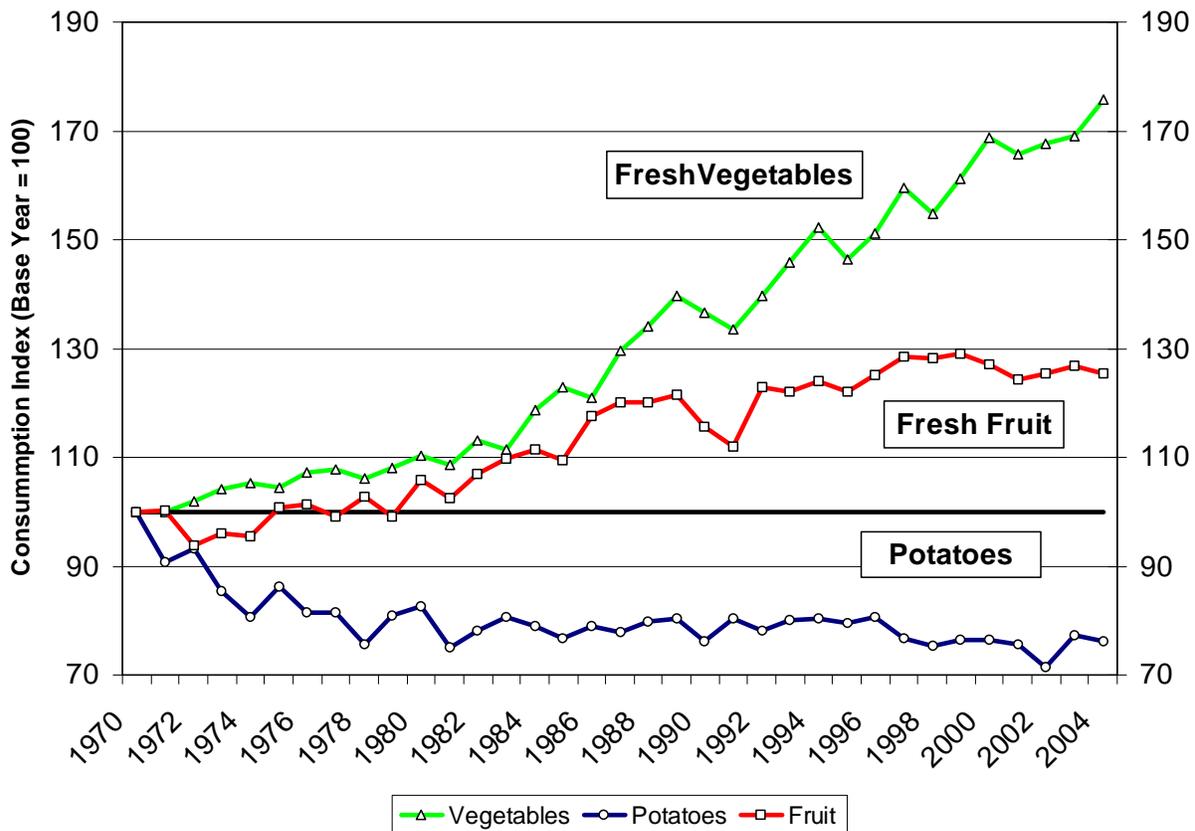
- Brazilian soybean production has increased significantly over the last two decades.
- The larger volume of soybeans produced has led to growth in Brazilian exports, especially to foreign countries such as the US, China and the European Union. The larger supplies of soybeans has also meant that more beans are being crushed in Brazil, this has helped to support their livestock industry because of more meal and the soybean oil is beginning to be used for biodiesel manufacturing.
- This Brazilian production growth is expected to continue and could play an important role in the development of our country's ethanol industry. As more US corn is used for ethanol, US soybean acreage will likely decline in order to grow more corn. The ability for the US to import increased volumes of soybeans will help the US to maintain the critical protein requirements for its livestock sectors.

US Average Milk Production Per Cow - Per Year



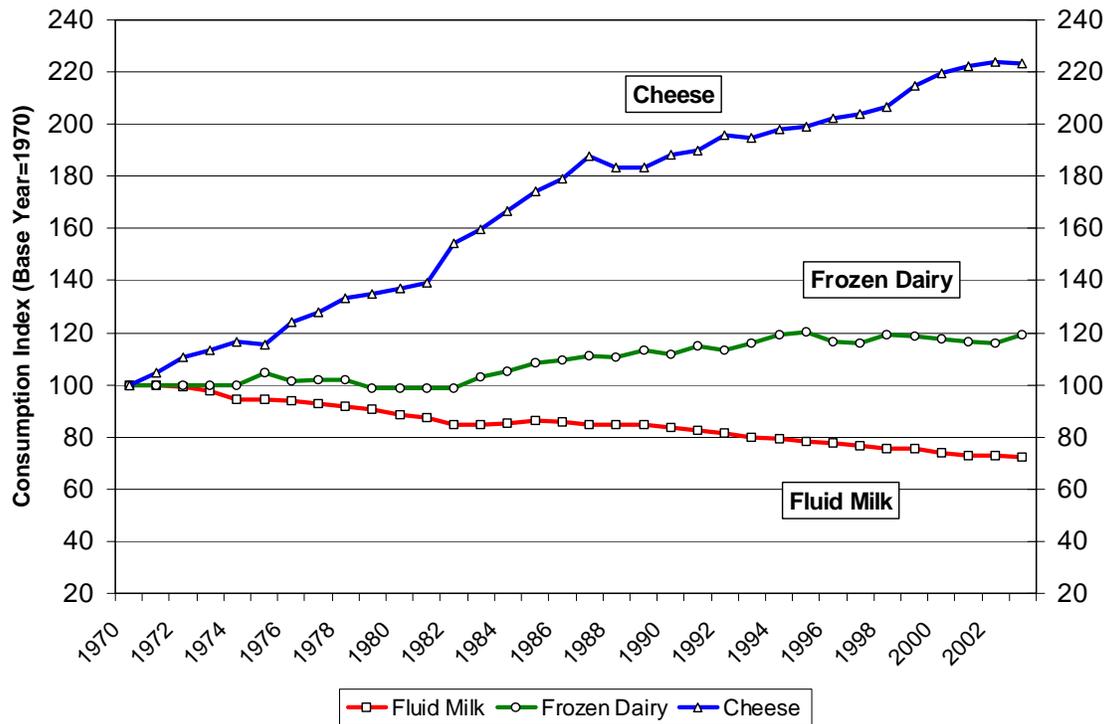
- Similar to the technological advancements in the production of crops (e.g., higher yields), the dairy industry has seen comparable growth.
- Since 1960, the average production of milk per cow per year in the US has grown from 7,029 pounds to 19,576 pounds, an increase of 179%!
- There are a number of reasons for the productivity gains in the dairy industry, one is the use of the hormone bST and the consolidation of the industry into larger average herd sizes which tend to have more sophisticated standard operating practices.

Indexation of US Per Capita Consumption of Fresh Fruits & Vegetables



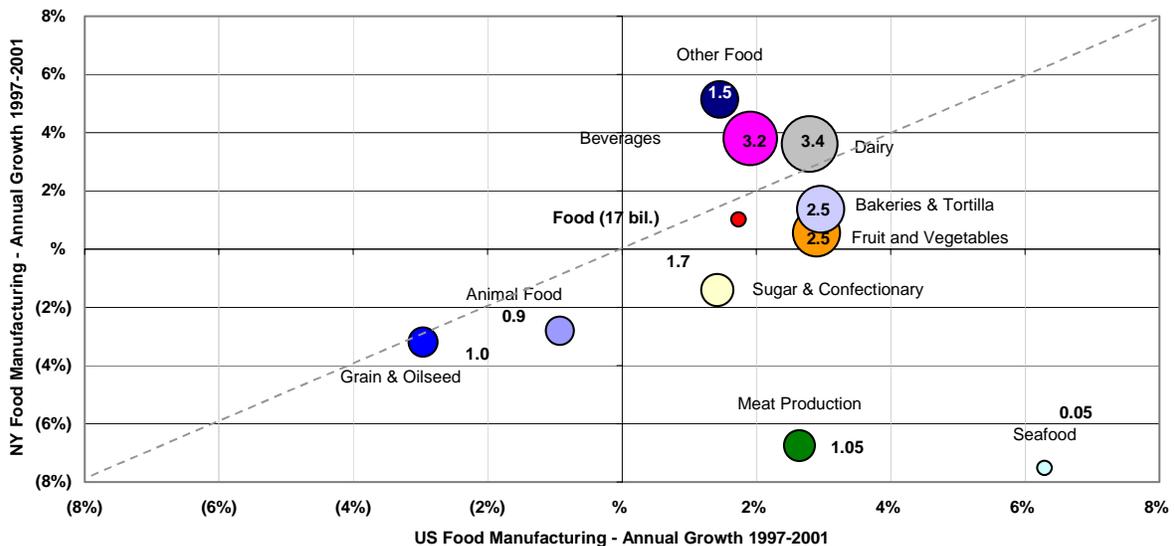
- The US has experienced significant consumptive growth in the area of fresh produce. The per capita consumption of fresh fruits and vegetables has risen strongly and steadily over the last 35 years, with fresh vegetables rising over 70% per capita and fresh fruit rising just under 30% per capita.
- While fresh produce consumption has been growing, canned and frozen fruits and vegetables consumption trends have remained flat or declining.
- One of the reasons for the strong demand growth in fresh vegetables has been a result of an explosion of branded bagged and fresh cut salads.

Indexation of US Per Capita Consumption of Dairy Products



- The US dairy industry has grown steadily over the last thirty years regarding the total volume of milk produced. The primary driver for the industry growth has been the demand for cheese(s) and to a lesser extent frozen dairy products. Fluid milk consumption has declined significantly, especially for full fat whole milk, consumption of skim milk and lowfat milk varieties have grown modestly.
- It takes approximately ten pounds of milk to produce one pound of cheese. Increased cheese consumption has driven the need for more fluid milk production in the US. Cheese consumption has expanded at multiple levels of the food chain, fast food (cheese burgers and pizzas), food service (growth in Italian and Mexican cuisine), retail sales (super market deli case growth), artisan cheeses.

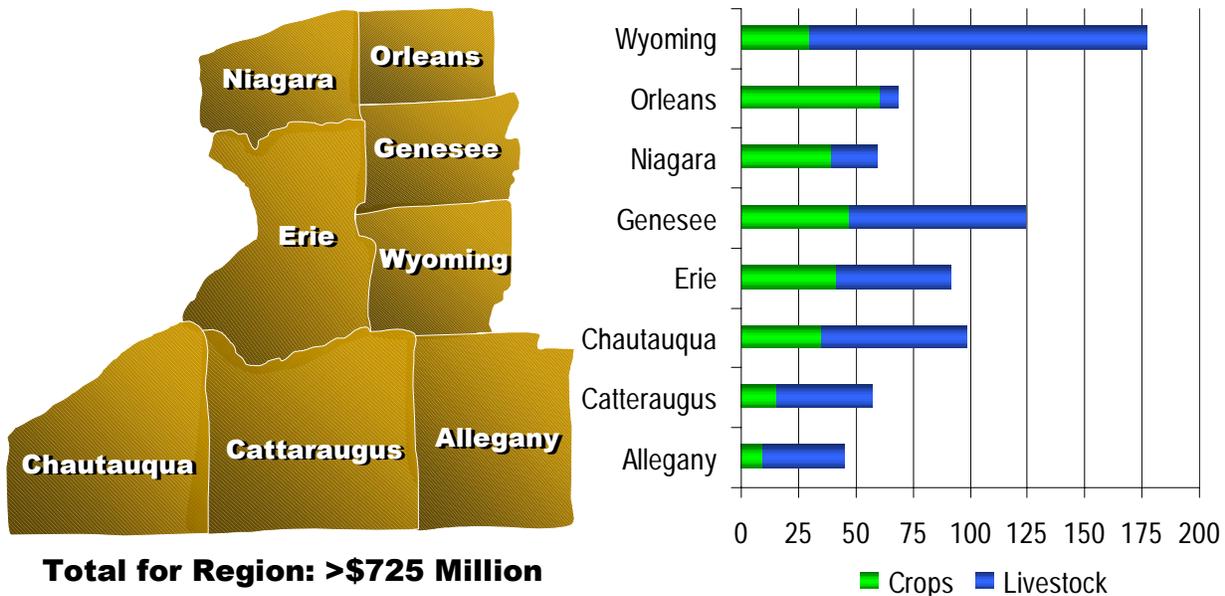
Growth Comparison of New York vs. US Food Manufacturing Sectors



* Bubble size and level indicate the 2001 value of each sector in billions.
 Source: U.S. Census

- Value-added food manufacturing in the State of New York is very diverse, ranging from dairy processing (\$3.4 billion in value of shipments, in 2001), beverages (\$3.2 billion) and fruit and vegetables (\$2.5 billion).
- Compared to the rate of change for the US, New York’s Dairy, Beverages and “Other Food” manufacturing sectors grew faster than the average national benchmark from 1997 to 2001. Meat production and seafood processing significantly lagged the US rate of change.

Western New York Crop & Livestock Revenues by County



- Based on annual agricultural cash receipts generated in the region, the counties of Wyoming and Genesee rank one and two respectively with Wyoming county having cash receipts over \$175 million and Genesee just under \$150 million.
- For the region, cash receipts from livestock (especially dairy) account for the largest portion of activity, not surprising since New York is ranked third in the country in dairy production.
- It should be noted that fruits and vegetables are an important crop in the region and nationally, however, their cash receipts are fairly small relative to traditional crop and livestock activities in the region.

Primary Western New York Agricultural Opportunities Profile Overviews

- **Dairy: Fluid Milk**
- **Dairy: Specialty Cheeses**
- **Dairy: Yogurt**
- **Renewable Energy: Ethanol**
- **Renewable Energy: Biodiesel**
- **Wineries: Large and Niche**

Agricultural Profile: Fluid Milk

Overview

New York State

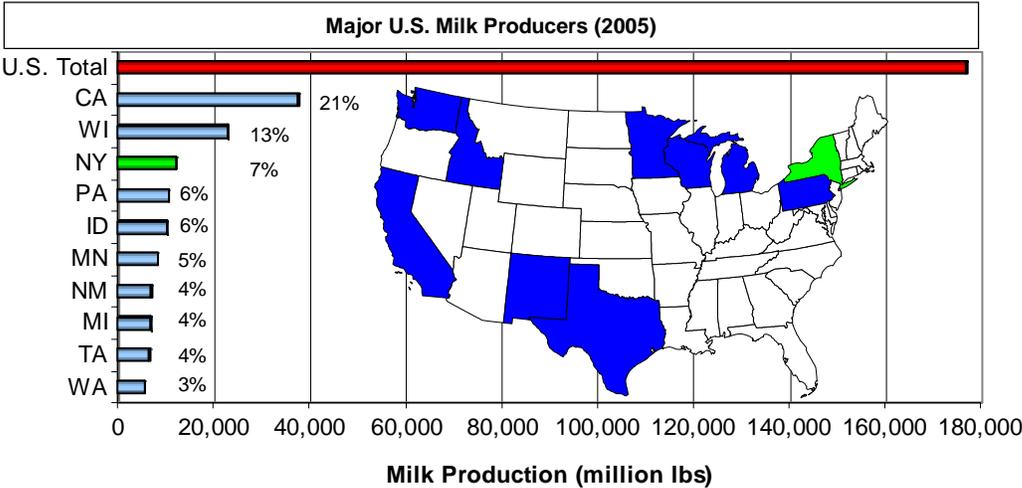
Milk is the leading agricultural product in New York State, accounting for half of the state’s total agricultural receipts.

Between 1985 and 2005, the number of U.S. dairy farms dropped by 71%. New York State is no exception to that consolidation movement, with a 59% drop over the same time period. Nationwide, this consolidation of the industry also went along with a decrease in total cow numbers. This reduction, however, was offset by an increase in yield, leading to an overall growth in milk production.

Although New York’s milk production per cow was below the national average in 2005 and ranked 21st, New York State is the third largest milk producer in the U.S. with a production in 2005 of 12.1 billion pounds.



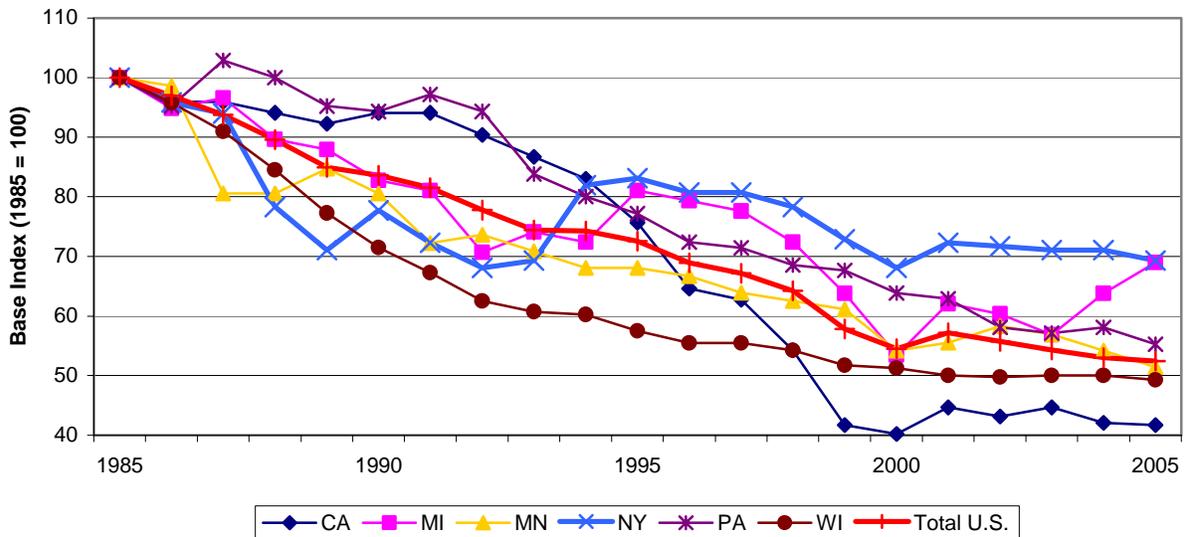
The average dairy farm in New York State is family-owned and consists of 97 cows, producing an average of 18,639 lbs of milk per cow per year, compared to, on average, 115 cows per operation and a yield of 19,576 lbs of milk in the US. Farm consolidation is not as advanced in New York State as in the rest of the country.



Source: NASS, USDA

The same phenomenon has occurred with processors as well, with the dairy industry seeing significant rationalization over the past decades. Some companies have shut down and others have merged to become more competitive and productive. Over the last 20 years, the number of processors has dropped almost 50% in the U.S. Comparatively, the New York State dairy industry has been more stable with a 30% decrease. In 2005, New York had 115 dairy processing plants producing one or more dairy products.

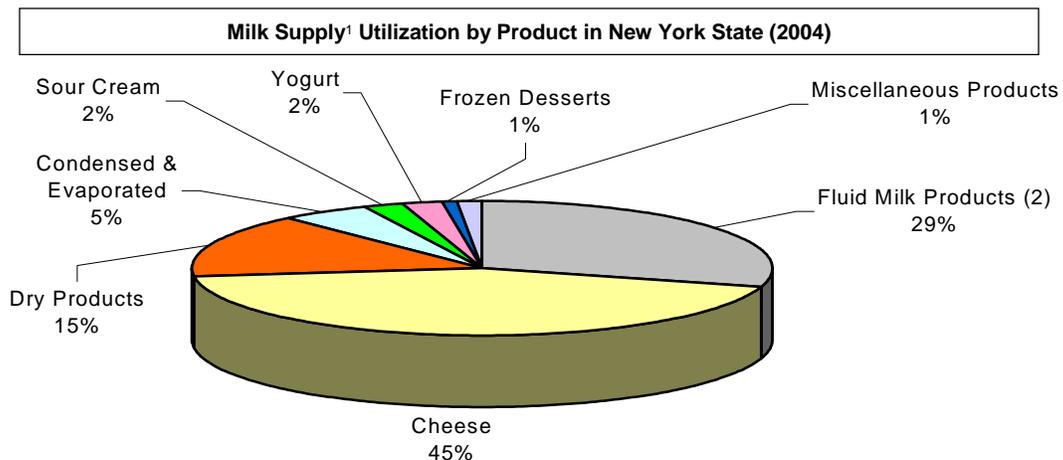
Dairy Plant Number Index (1985-2005)



Source: NASS, USDA

Despite New York State's large milk production, milk and cream supplies are tight at certain times of the year, forcing processors to either pay a premium or substitute with dry ingredients. In 2004, total receipts of milk and other dairy products at New York State dairy plants exceeded total production by 2.2 billion lbs. Large quantities of packaged fluid milk products are for instance sold to other states, especially to the Boston and Southeast markets, which bolsters the demand for fluid milk by New York State dairy plants.

Approximately 29% of the State's production is used for fluid consumption. The remainder of the State's milk is used for processed dairy products. New York's dairy processing industry is primarily focused on commodity production.



¹ Includes milk, cream, skim, condensed and powdered skim, whey and buttermilk.

² Includes whole, lowfat, skim and flavored milk, buttermilk, cream, and half and half.

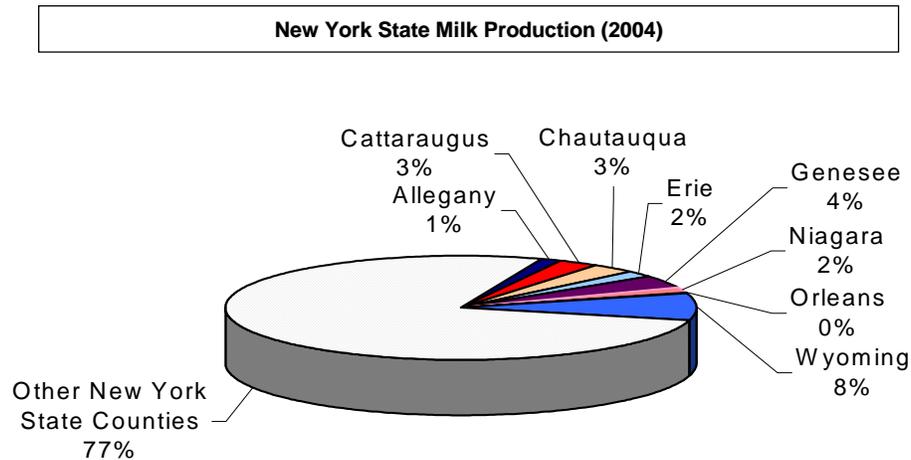
Source: New York State Department of Agriculture

More milk is used in cheese production than any other dairy product (45% in 2004, including cottage cheese). While many varieties of cheese are produced in the state, five varieties (cheddar, mozzarella, ricotta, cream cheese, and cottage cheese) represent 91% of the production. New York State is the fourth largest producer of cheese in the nation, and ranks second for yogurt production.

New York State is the largest U.S. producer of cream cheese, accounting for 29.2% of the national production in 2004; the largest factory is operated by Kraft (Philadelphia Cream Cheese) in Lowville, NY. Note, On January 31, 2006, Kraft Food, Inc. announced a worldwide restructuring plan in which 20 plants will be closed. It was unsure, however, at the time this report was written, which plants will be affected. The State of New York is also the leader in cottage cheese production, accounting for an estimated 22% of the total U.S. production.

Western New York State

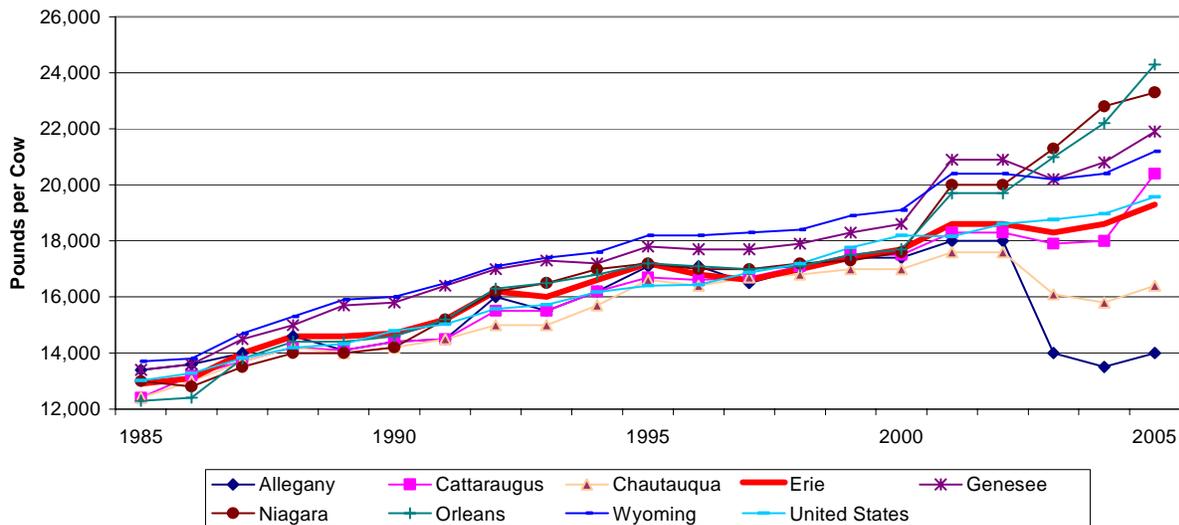
Western New York State accounts for 23% of New York milk production (or about 2.8 billion lbs). Wyoming County is New York State’s top milk producer.



Source: NASS, USDA

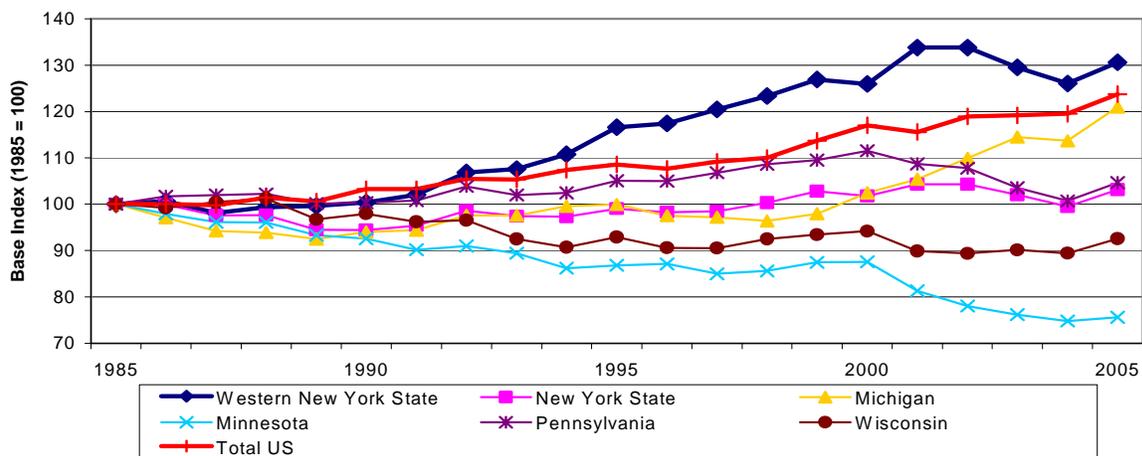
Of the eight counties located in Western New York State, six have a milk production per cow higher than the national average. In 2005, the average yield per cow in Western New York State was 19,863 lbs, compared to 21,656 lbs in Michigan, 18,722 lbs in Pennsylvania, 18,500 lbs in Wisconsin, and 19,576 lbs for the U.S. average. In addition, the production growth rate in Western New York State has exceeded the rates observed in the Midwest.

Milk Yield in Western New York State (1985-2005)



Source: NASS, USDA

Indexation Of Total Milk Production (1985-2005)



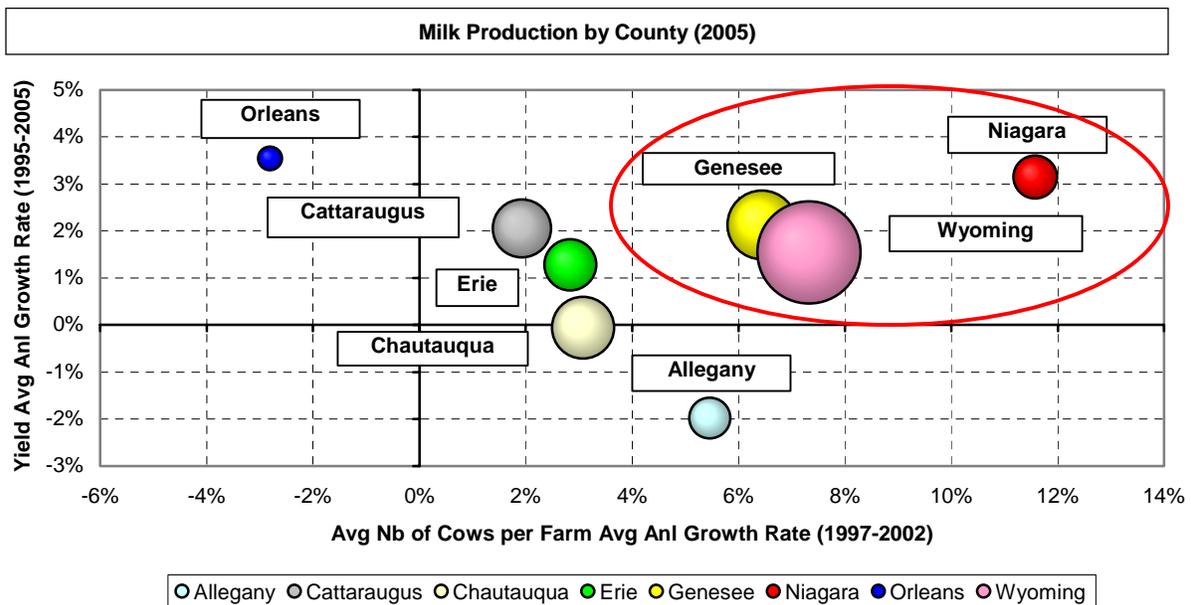
Source: NASS, USDA

Three counties in particular, Genesee, Niagara, and Wyoming, have an average number of milk cows per farm far greater than the state and national average, which demonstrates a high level of consolidation.

Average Number of Milk Cows Per Farm		
	2002	1997
Allegany	65	50
Cattaraugus	63	58
Chautauqua	71	61
Erie	97	85
Genesee	230	168
Niagara	173	100
Orleans	70	81
Wyoming	229	161
Western New York State	114	89
New York State	94	78
California	589	497
Michigan	72	73
Pennsylvania	60	56
Wisconsin	71	56
United States	100	75

When comparing the 8 counties of Western New York State, it is apparent that Genesee, Niagara, and Wyoming dominate the dairy farming activity in the region, in terms of production, consolidation into larger farms and growth.

Source: USDA, Census of Agriculture, 1997, 2002



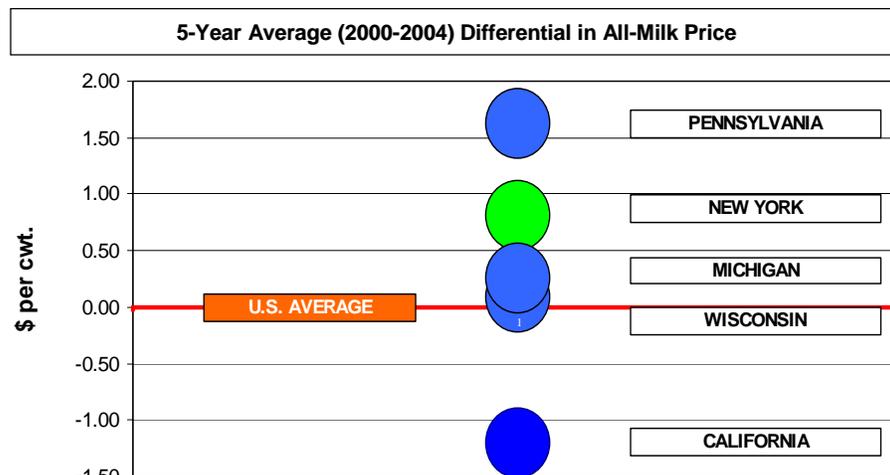
The size of the bubble represents the milk production.
Source: USDA, Census of Agriculture, 1997, 2002

Western New York State has approximately 21 dairy processing plants producing one or more dairy products. As of August 2006, the largest dairy processors in the area were Empire Cheese, Inc., Friendship Dairies, Inc., O-At-Ka Milk Products Cooperatives, Inc., and Sorrento Lactalis, Inc.

Competition

- In 2005, Canadian exports of dairy products reached 253 million lbs for a total value of \$200 million. The U.S. is the primary destination for Canadian dairy products, accounting for 48% of the total value of shipments in 2005. Exports however have been declining. Indeed, since the 2002 World Trade Organization ruling regarding Canadian dairy product export practices, Canadian dairy producers are limited in the quantity of dairy products that can be exported from Canada. In addition, the appreciation of the Canadian dollar vis-à-vis the US dollar has had a detrimental impact on exports to the U.S. Finally, dairy processing costs in Canada are higher than in New York State, and in the U.S. generally, which decreases the competitiveness of the Canadian dairy industry compared to the U.S.
- In the U.S., New York’s main competitors are the large dairy producers located in the Midwest (Pennsylvania, Michigan, Wisconsin), and California, the largest dairy producer in the U.S. When comparing milk prices, East coast prices are significantly higher than West Coast ones as illustrated by California. New York’s milk prices are also higher than in Wisconsin and Michigan, but lower than in Pennsylvania.

- California leads the U.S. in fluid milk, butter, ice cream and nonfat dry milk production. Wisconsin is the leading cheese producer, with 115 cheese manufacturing plants in 2005; of those, 75 small- to medium-sized plants produced specialty and artisan dairy products.



Source: USDA

Major Changes

- The major change in the industry has been the consolidation of dairy farming and the dairy processing industry in order to increase their competitiveness.
- The consumption of fluid milk has been in a state of steady decline for over 30 years. This decrease, however, was offset by a consumption increase of other dairy products, especially cheese.

Growth Trends

- Although the total numbers of cows and dairy farms have shrunk, the average yield per cow has increased leading to an overall growth in milk production over the long term.

- Organic farming has been one of the fastest growing segments of U.S. agriculture for over a decade. As of 2003, 74,435 milk cows were certified as organic in the U.S. The top three states with organically certified milk cows in 2003 were Wisconsin, California, and New York. In 2003, there were 7,809 certified organic milk cows in New York State, up 26% from 2000.

Challenges

- With costs increasing every year, farmers must continually improve the efficiencies of their operations to remain competitive.
- As landowners, the burden of property taxes is an important concern for farmers. Despite attempts to decrease this burden, property taxes still adversely impact competitiveness of New York farmers.
- Manufacturers who cannot expand must consider producing specialty products to maintain or improve their operating margins, particularly since expansion is dependent on growing milk supply in the region.

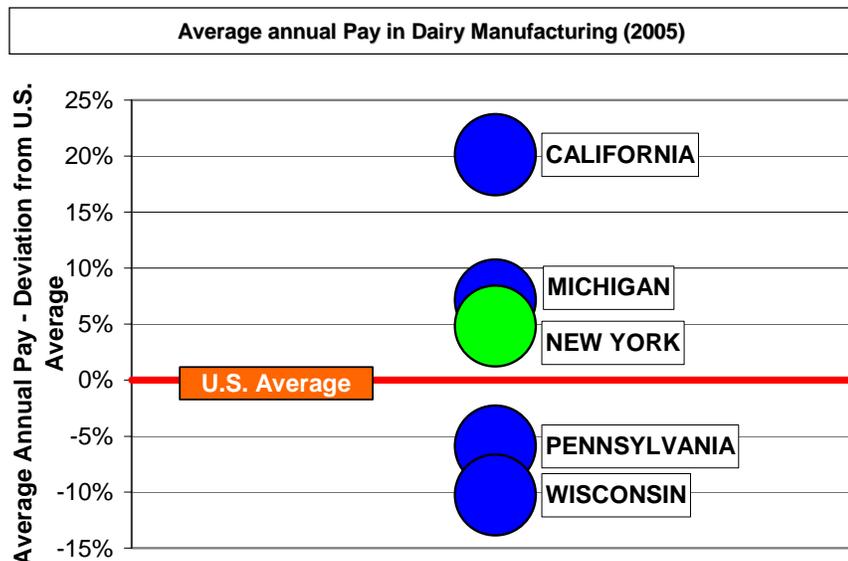
Resources

- As of August 2006, 4 ethanol plants, with a total capacity of 233.5 million gallon a year (mgy), were proposed in New York State. These plants represent a source of distillers grain, which should help better manage the cost of feed for Western New York State dairy farmers.
- A major challenge of manufacturers is the cost and supply dependability of milk, especially in New York State where milk utilization exceeds the production.

Employment

- New York State's unemployment rate (not seasonally adjusted) was 4.5% in June 2006.
- Growth in the farm segment is very limited.

In 2005, average annual pay in dairy manufacturing in New York State was 5% higher than the national average. California and Michigan both had pay levels above New York. Wisconsin and Pennsylvania, on the other hand, were below the national average.



Source: U.S. Department of Labor

Specific Requirements

- Dairy farming requires an access to good pastureland and feed.
- Wastewater treatment is a major issue for cheese plants, and the dairy industry in general.
- Larger operations will require more sophisticated management skills and access to semi-skilled labor.

Potential for Growth

- In order to increase their competitiveness and profitability, dairy farmers need to either increase the scale of their operations (economies of scale), or produce specialty products such as organic or kosher milk, or farmstead cheese. Organic farmers for instance can increase their receipts by 4-7% compared to conventional milk.
- Specialty products represent a good growth potential for dairy processors. Indeed to increase their operating margins, processors must consider increasing the efficiency of their operations or producing more high-margin products. However, due to milk supply constraints in New York State, it is doubtful processors can or should increase their production. On the other hand, with the proximity to East Coast markets, New York City especially, which provides access to a large customer base, specialty products present some good growth potential.

Competitive Benchmark

The following table benchmarks Western New York and the State of New York against California and Wisconsin that lead the country in fluid milk production.

		Western New York	New York	California	Wisconsin
Market Overview					
Total Milk Production	Thousand lbs	2,829	12,078	37,564	22,866
	CAGR (5 years)	-0.6%	-0.3%	3.1%	0.7%
	U.S. Rank	--	3	1	2
Average Yield per Cow	lbs/Head	19,863	18,639	21,404	18,500
	CAGR (5 years)	0.5%	0.7%	0.6%	1.9%
	U.S. Rank	--	21	7	23
Average Herd Size	Head/Farm	114 ¹	115	763	81
	CAGR (5 years)	4.9% ²	5.4%	4.7%	4.5%
Number of Dairy Farms	Number	1,177 ¹	6,700	2,300	15,300
	CAGR (5 years)	-5.6% ²	-2.1%	-2.1%	-5.4%
All Milk Price ³	\$ per cwt of milk	--	15.15	13.26	15.13
Inputs/Production Costs					
Milk Feed Ratio ⁴		--	2.40	2.10	3.17
Operating Costs ⁵	\$ per cwt of milk	--	9.75	9.52	8.29
Hired Labor ⁵	\$ per cwt of milk	--	1.23	1.06	1.45
Taxes and Insurance ⁵	\$ per cwt of milk	--	0.21	0.26	0.23
Fixed Asset Costs					
Opportunity Cost of Land (rental rate) ⁵	\$ per cwt of milk	--	0.06	0.01	0.08

Data are for 2005 unless otherwise noted.

-- : Not available

CAGR: Compounded annual growth rate

cwt: Hundredweight

¹ 2002 Census of Agriculture

² Based on 1997 and 2002 Census of Agriculture

³ Three-year Average all milk price, 2003-05

⁴ Three-year average, 2003-05

⁵ Revenue that could be derived from using the land for other purposes (e.g., rental).

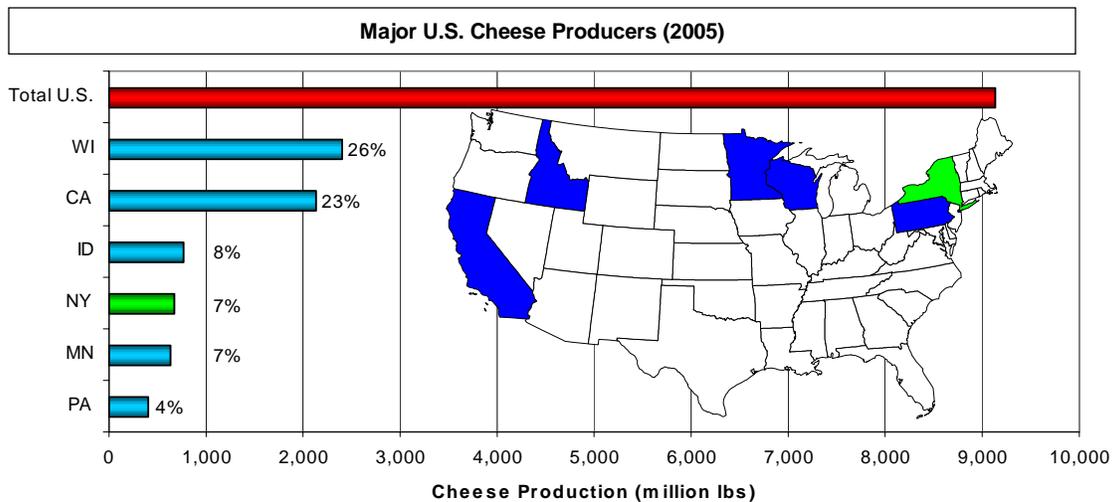
Three-year average, USDA ERS estimates, 2003-06

Source: Informa Economics, U.S. Census Bureau, USDA

Agricultural Profile: Specialty Cheese

Overview

Total U.S. cheese production in 2005, excluding cottage cheese, was 9.1 billion lbs, which represents about one-third of total U.S. milk utilization. New York State was the 4th leading cheese producer in 2005 with 667 million lbs. Wisconsin and California both lead the U.S. cheese manufacturing industry with 2.4 billion lbs and 2.1 billion lbs, respectively in 2005. Between 1985 and 2005, total U.S. cheese production has grown 80%.



Source: NASS, USDA

The increase in cheese production can be attributed to population growth, consumer interest for cheese, and increased utilization in food processing and foodservice. U.S. per capita cheese consumption was 31.4 lbs in 2005, a 39% increase compared to 1985; U.S. cheese processors supplied most of that growth.

The U.S. imported 460 million lbs of cheese during 2005 valued at \$1 billion, and during the same period, exported 127 million lbs of cheese, worth \$202 million. The U.S. therefore is a net importer of cheese. The European Union, New Zealand, Argentina and Australia account for 83% of total cheese imports (in value).

According to the California Milk Advisory Board, commodity cheese accounted for 91% of the U.S. cheese consumption (about 8 billion lbs) in 2003, whereas specialty cheese represented the remaining 9% (815 million lbs). However, over the past decade, specialty cheese consumption has increased 75% to 2.8lbs per capita per year in 2003. Hence, specialty cheese is a primary driver of cheese consumption growth. In 2003, specialty cheese was estimated to represent 16% of the \$39.9 billion cheese market.

Specialty cheese is defined as a variety of cheese produced in limited volume (less than 40 million lbs of a specific cheese variety, nationally in a year), with distinctive characteristics that result in high quality products, create added value and command a premium price from consumers. This category can include artisan and farmstead cheeses as well as Italian- and Hispanic-style cheeses.



Growth in Specialty Cheese Consumption (1994-2003)			
	1994	2003	Change
	<---Million lbs--->		
Total Cheese Consumption	6,735	8,557	27%
Specialty Cheese Consumption	420	815	94%
	<---lbs per capita--->		
Total per Capita Cheese Consumption	26.6	30.5	15%
Total per Capita Specialty Cheese Consumption	1.6	2.8	75%

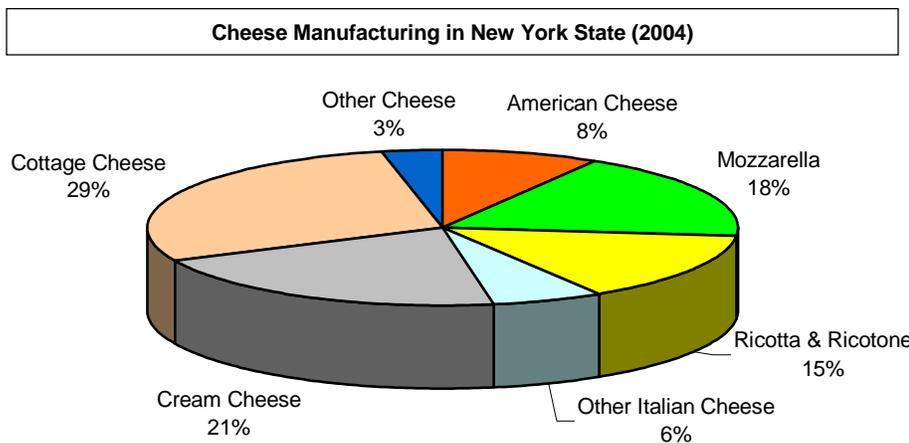
Source: California Milk Advisory Board

According to the California Milk Advisory Board, there were 350 specialty cheese processors in the U.S. in 2003. Of those, two-thirds were located in Wisconsin, California, or New England.

Wisconsin is considered to be the leading state in specialty cheese production, with a production estimated at 355 million lbs of specialty cheese in 2005, 7% above the 2003 level. Specialty products now account for 14% of the state's total cheese production. In 2005, Wisconsin had 115 manufacturing plants involved in cheese production; of those, 75 small- to medium-sized plants produced specialty and artisan dairy products.

New York State

More milk is used in cheese production than any other dairy product in New York State. While many varieties of cheese are produced in the state, five varieties (cheddar, mozzarella, ricotta, cream cheese, and cottage cheese) represent 91% of the production.

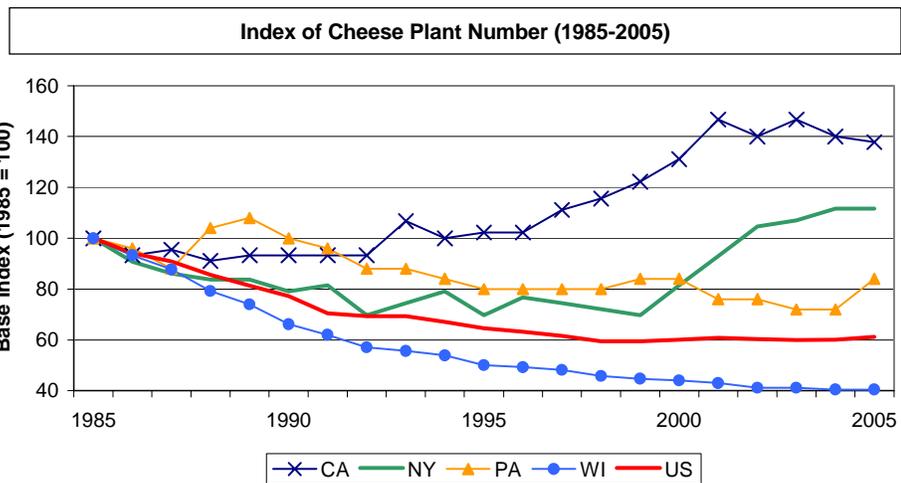


Source: New York State Department of Agriculture

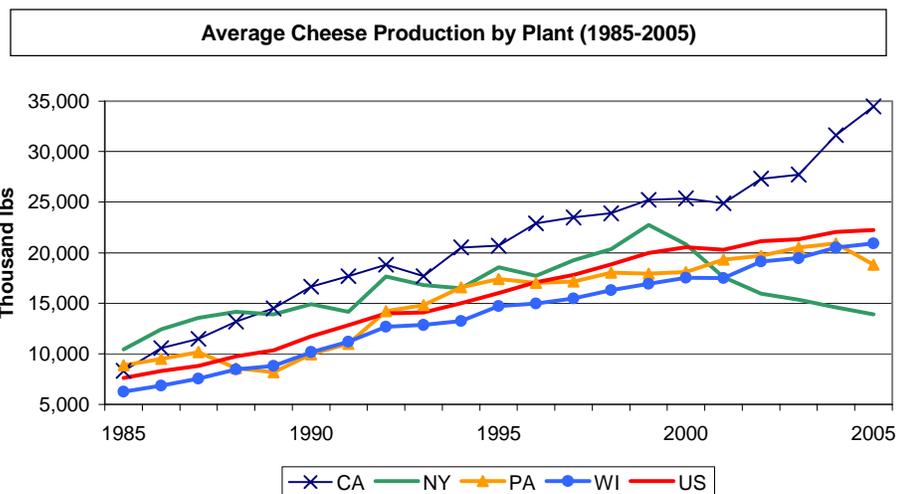
New York State is the largest U.S. producer of cream cheese, accounting for 29.2% of the national production in 2004, and the leader in cottage cheese production, accounting for an estimated 22% of the total U.S. production.

In 2005, there were a total of 48 cheese manufacturing plants (excluding cottage cheese) in New York State producing one or more cheese varieties. For comparison, in 2005, Wisconsin, California, and Pennsylvania had 115, 62, and 21 cheese manufacturing plants, respectively.

The trend in cheese production has been toward concentration, with an increase of the average cheese production per plant, in an effort to increase economies of scale, and competitiveness. California and New York, however, are two states that have increased the number of their cheese plants.



The trend in New York State is also toward less production per plant. The main drivers of this decline include the tightness of the milk supply in New York State and new specialty-type entrants with smaller capacity.



Source: NASS, USDA

Western New York State has at least 8 cheese manufacturing plants producing one or more cheeses. As of August 2006, the largest cheese producers in Western New York State were Empire Cheese, Inc., Friendship Dairies, Inc., and Sorrento Lactalis, Inc.

Competition

- Wisconsin and California are the main competitors for New York. Both states have lower milk prices than New York.
- The U.S. imported 460 million lbs of cheese during 2005. The European Union, New Zealand, Argentina and Australia account for 83% of total cheese imports (in value). Most U.S. cheese imports, however, take place within a rigid quota system at a set tariff rate, and many cheese importers pay higher tariffs for over-quota cheese.

Major Changes

- The consumption of fluid milk has been in a state of steady decline for over 30 years. This decrease, however, was offset by a consumption increase of other dairy products, especially cheese.
- The trend in cheese production has been toward concentration. However, the number of cheese manufacturing plants has been increasing in New York State.

Growth Trends

- Cheese consumption and sales in the U.S. continue to rise. Specialty cheese is one of the main drivers of this growth.
- Agri-tourism is a growing business in the U.S. It has the potential to increase demand for locally produced specialty cheeses.
- There is a growing market for whey, a by-product of milk. Whey is rich in lactose and its price has increased due, in part, to the current high sugar prices. Large cheese producers have the possibility to increase their margin by selling whey powder, whey protein concentrates or fractionates.

Challenges

- An important challenge faced by specialty and artisan cheese producers is to differentiate themselves from commodity cheeses in order to add value to their production and gain market shares. Marketing is an important component of successful specialty cheese businesses.

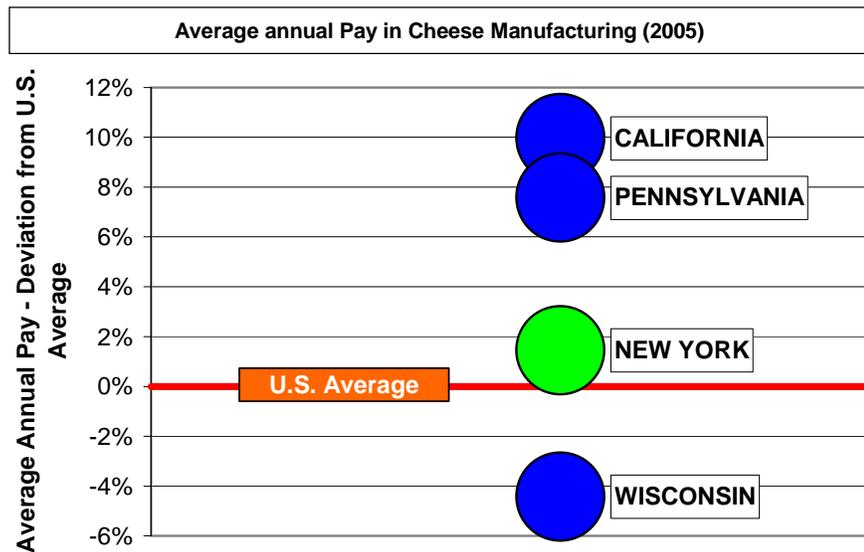
Resources

- Despite New York State’s large milk production, milk and cream supplies are tight at certain times of the year, forcing processors to either pay a premium or substitute with dry ingredients. In 2004, total receipts of milk and other dairy products at New York State dairy plants exceeded total production by 2.2 billion lbs. Large quantities of packaged fluid milk products are for instance sold to other states, especially to the Boston and Southeast markets, which bolsters the demand for fluid milk by New York State dairy plants. Supply dependability of milk is a concern for dairy manufacturers.

Employment

- New York State's unemployment rate (not seasonally adjusted) was 4.5% in June 2006.

- In 2005, average annual pay in cheese manufacturing in New York State was 1% higher than the national average. California and Pennsylvania both had pay levels above New York. Wisconsin, on the other hand, was 4% below the national average.



Source: U.S. Department of Labor

Specific Requirements

- Specialty cheese businesses tend to be small, independently owned businesses. It is a way to add value to small- to medium sized dairy operations.
- Wastewater treatment is a major issue for cheese plants, and the dairy industry in general.
- Larger operations will require more sophisticated management skills and access to semi-skilled labor.

Competitive Benchmark

The following table benchmarks the State of New York against California and Wisconsin for yogurt manufacturing.

		New York	California	Wisconsin
Market Overview				
Total Cheese Consumption ¹	Million lbs	585,403	1,107,048	168,691
Total Cheese Production	Thousand lbs	666,833	2,136,780	2,405,699
	CAGR (5 years)	-1.3%	6.8%	4.6%
	U.S. Rank	4	2	1
Establishment Level	Number	48	62	115
	CAGR (5 years)	4.7%	-1.6%	-1.5%
Employment Level	Number	2,345 ²	4,217 ²	12,759 ²
	CAGR (5 years)	-0.4% ³	7.0% ³	0.6% ³
Inputs/Production Costs				
All Milk Price ⁴	\$ per cwt of milk	15.1	13.3	15.1
Electricity Cost ⁵	¢ per Kilowatthour	7.5	8.5	5.4
Average Weekly Wage	\$/week	770	835	726
Transportation				
Transportation Cost to NY City		\$765 ⁶	\$5,824 ⁷	\$2,681 ⁸

Data are for 2005 unless otherwise noted.

¹ Based on national per capita consumption estimates.

² 2002 Census of Manufacturing

³ Based on 1997 and 2002 Census of Manufacturing

⁴ Three-year average all milk price, 2003-05

⁵ Two-year average 2005-2006

⁶ Transportation rate from Buffalo, NY to Newark/Elizabeth, NJ. Standard refrigerated truckload rate.

⁷ Transportation rate from Santa Maria, CA to Newark/Elizabeth, NJ. Standard refrigerated truckload rate.

⁸ Transportation rate from Wausua, WI to Newark/Elizabeth, NJ. Standard refrigerated truckload rate.

Source: Bureau of Labor Statistics, Informa Economics, U.S. Census Bureau, USDA

Potential for Growth

- New York State has added a \$1 million agri-tourism initiative to the state budget in 2006. This initiative focuses on food and agriculture-related businesses such as farm stands, cider mills, maple sugar processors, cheesemakers and wineries, and allow them to enhance their offerings to attract more tourists. The grant program, provides up to \$50,000 in matching funds for projects involving traditional agri-tourism activities, as well as new approaches in promoting New York food and agriculture. Western New York State artisan cheesemakers could take advantage of this grant to develop their activity.
- Specialty products in general and specialty cheese in particular represent a good growth potential for dairy manufacturers. Indeed to increase their operating margins, processors must consider increasing the efficiency of their operations or producing more high-margin products. However, due to milk supply constraints in New York State, it is doubtful processors can or should increase their production. On the other hand, with the proximity to East Coast markets, New York City especially, which provides access to a large customer base, specialty cheeses present some good growth potential.

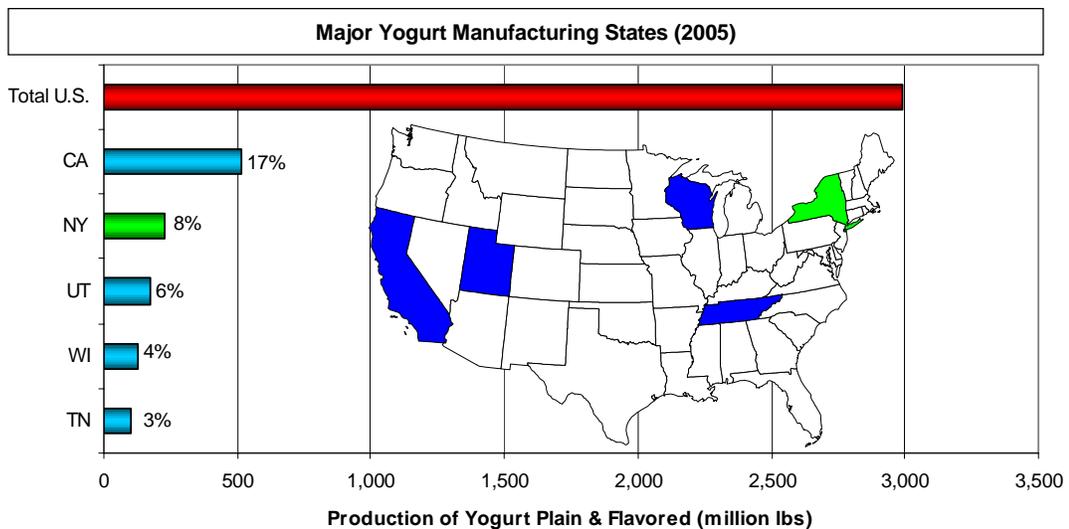
Agricultural Profile: Yogurt

Overview

New York State is the second largest producer of yogurt in the U.S., with a production in 2005 of 226 million lbs, accounting for 8% of the total U.S. yogurt production. Yogurt production is widely distributed across the nation, and other than California that dominates the market with 17% of the total production, there is no other state leading the market.

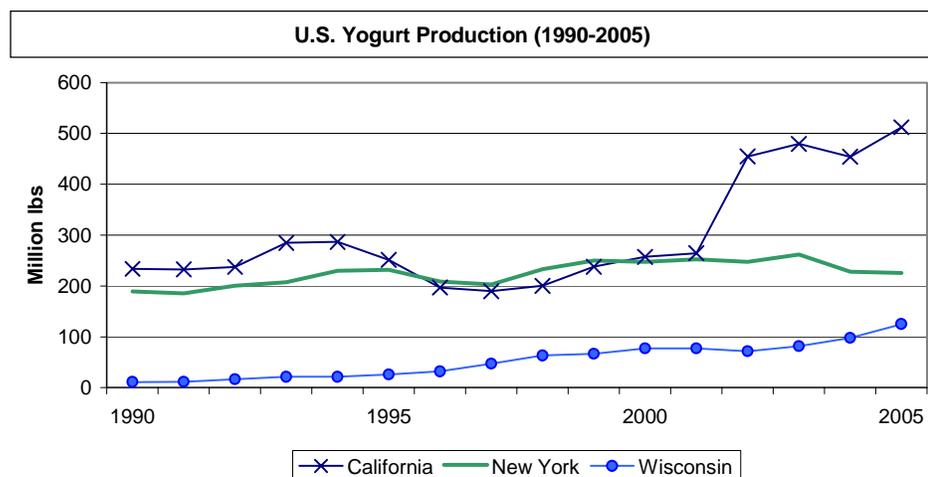


Source: Breyers



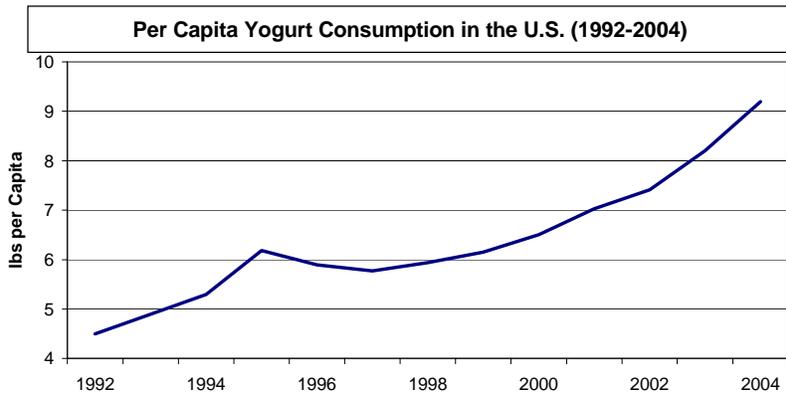
Source: NASS, USDA

Between 1989 and 2005, yogurt production in the U.S. has grown at an average rate of 8% per year. New York's production, however, has shown little growth in the last fifteen years. Wisconsin, on the other hand, has seen its yogurt production soar in the last decade, from 11 million lbs in 1990 to 125 million lbs in 2005.



Source: NASS, USDA

According to the most recent data from USDA, per capita consumption of yogurt has also increased almost 50% in the last decade, from 6.2 lbs in 1995 to 9.2 lbs in 2004. The yogurt industry has been benefiting from the healthy image conveyed by the product.



Source: NASS, USDA

A listing of the top yogurt vendors in the U.S. shows that a few players dominate the market, and that most have experienced some level of growth in the last year.

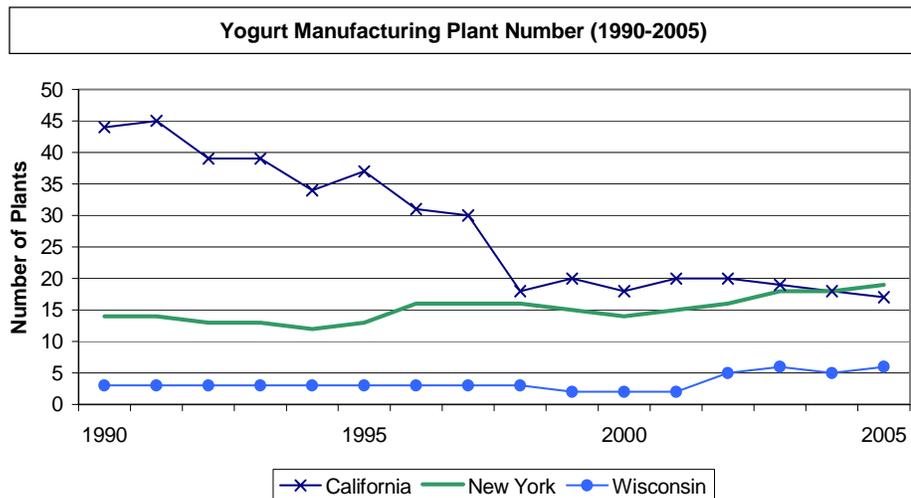
Brand	Dollar Sales (\$ millions)	Change vs. Previous Year	Unit Sales (millions)	Change vs. Previous Year
Yoplait	1,068	8.5%	1,335	12.0%
Dannon	895	1.3%	701	-1.2%
Private Label	372	8.5%	653	7.6%
Stonyfield Label	201	22.6%	129	22.5%
Kraft Foods	92	-14.0%	145	-8.0%
Yo Farm	50	-0.1%	67	-1.3%
Wells Dairy	45	24.0%	71	15.9%
Columbo	44	-7.4%	55	-9.8%
Johanna Foods	38	3.1%	75	2.8%
Meadow Gold	35	8.5%	14	4.0%
Total Category	3,024	5.2%	3,458	5.5%

52 weeks ended 04/16/06

Numbers are for supermarket, drugstore and mass merchandiser retailers but don't include Wal-mart.

Source: Information Resources Inc.

Like the rest of the dairy industry, the yogurt manufacturing industry has seen significant rationalization over the past decades, with the total number of plants in the U.S. declining 37% between 1990 and 2005. New York and Wisconsin, however, are two states that have increased the number of their yogurt manufacturing plants.



Source: NASS, USDA

In 2005, there were 19 yogurt plants in New York State; the main dairy companies involved in yogurt manufacturing include HP Hood LLC, Agri-Mark Inc., CoolBrands and Upstate Farms Cooperative Inc.

Recent changes in the New York yogurt manufacturing industry landscape include the acquisition by Hamdi Ulukaya (Agro-Farma, Inc, and Euphrates Inc.) of the ex-Kraft plant in South Edmeston, which ceased its operations in April 2005, and a proposed plant in Johnstown announced by the Greek company Fage Dairy Industry S.A. Both companies would produce Greek-style yogurts, which emphasizes the dynamism of the yogurt demand in the Northeast.

Competition

- Imports represent a very small share of the total U.S. yogurt consumption (12.7 million lbs in 2005). Competition for New York State is therefore limited to the U.S., mainly California and Wisconsin in the area.

Major Changes

- The consumption of fluid milk has been in a state of steady decline for over 30 years. This decrease, however, was offset by a consumption increase of other dairy products, such as cheese and yogurt.

Growth Trends

- Per capita consumption of yogurt has increased almost 50% in the last decade, from 6.2 lbs in 1995 to 9.2 lbs in 2004. In 2005 also, total yogurt sales grew 5.5% compared to 2004.

Challenges

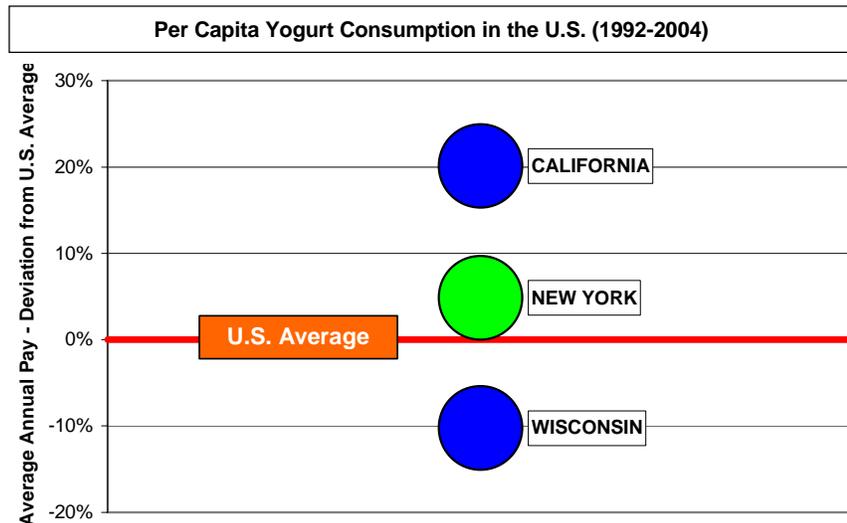
- The yogurt manufacturing industry is relatively concentrated with Yoplait and Dannon accounting for 65% of national sales.

Resources

- Despite New York State's large milk production (3rd largest milk producer in the U.S.), milk and cream supplies are tight at certain times of the year, forcing processors to either pay a premium or substitute with dry ingredients. Overall, milk utilization exceeds milk production in New York State, and supply dependability of milk can be a concern for dairy processors.

Employment

- In 2005, average annual pay in dairy manufacturing in New York State was 5% higher than the national average. By comparison, California was 20% above the national average, and Wisconsin, 10% below.



Source: U.S. Department of Labor

Specific Requirements

- Wastewater treatment is a major issue for the dairy industry.

Potential for Growth

- Yogurt consumption has been growing at a fast pace in the U.S., gaining 50% in the last decade. With the proximity to East Coast markets, New York City in particular, New York State has access to a large customer base. With the prospect of a continued increase in production, yogurt manufacturing presents a good growth potential in Western New York State, a large milk producing area.

Competitive Benchmark

The following table benchmarks the State of New York against California and Wisconsin that lead the country in cheese manufacturing.

		New York	California	Wisconsin
Market Overview				
Total Yogurt Consumption ¹	Thousand lbs	171,629	324,565	49,457
Total Yogurt Production	Thousand lbs	225,646	511,990	124,974
	CAGR (5 years)	-2.8%	18.0%	12.7%
	U.S. Rank	2	1	4
Average Yogurt Production by Plant	Thousand lbs	11,876	30,117	20,829
	CAGR (5 years)	-8.4%	22.9%	-14.4%
Establishment Level	Number	19	17	6
	CAGR (5 years)	6.1%	-4.0%	31.6%
Inputs/Production Costs				
All Milk Price ²	\$ per cwt of milk	15.1	13.3	15.1
Electricity Cost ³	¢ per Kilowatthour	7.5	8.5	5.4
Average Weekly Wage	\$/week	770	835	726
Transportation				
Transportation Cost to NY City		\$765 ⁴	\$5,824 ⁵	\$2,681 ⁶

Data are for 2005 unless otherwise noted.

CAGR: Compounded annual growth rate

cwt: Hundredweight

¹ Based on national per capita consumption estimates.

² Three-year Average all milk price, 2003-05

³ Two-year average 2005-2006

⁴ Transportation rate from Buffalo, NY to Newark/Elizabeth, NJ. Standard refrigerated truckload rate.

⁵ Transportation rate from Santa Maria, CA to Newark/Elizabeth, NJ. Standard refrigerated truckload rate.

⁶ Transportation rate from Wausua, WI to Newark/Elizabeth, NJ. Standard refrigerated truckload rate.

Source: Bureau of Labor Statistics, Informa Economics, U.S. Census Bureau, USDA

Agricultural Profile: Ethanol

Overview

Ethanol is an alcohol that can be used as fuel for automobiles either alone in special engines or blended with gasoline for petroleum engines. It is also used as an oxygenate additive for standard gasoline, as a replacement for MTBE.

Ethanol is produced by converting sugar/starch into ethanol through fermentation. Corn is the primary feedstock used in the U.S. by the ethanol industry; distillers dried grains with solubles (DDGS) is the by-product of this process. On average, one bushel of corn (56 lbs) yields 2.8 gallons of ethanol and 17 lbs of DDGS.



DDGS refers to the remaining portions of the corn kernel, mainly fiber and protein, that are not converted into ethanol in the dry-mill process. DDGS is usually sold as livestock feed, dairy cattle especially.

The Energy Policy Act of 2005 was signed into law by President George W. Bush on August 8, 2005. The most important provision for ethanol in the 2005 Energy Bill is a Renewable Fuels Standard (RFS) that would require motor fuels sold in the US to contain at least the following volumes of renewables in future years:

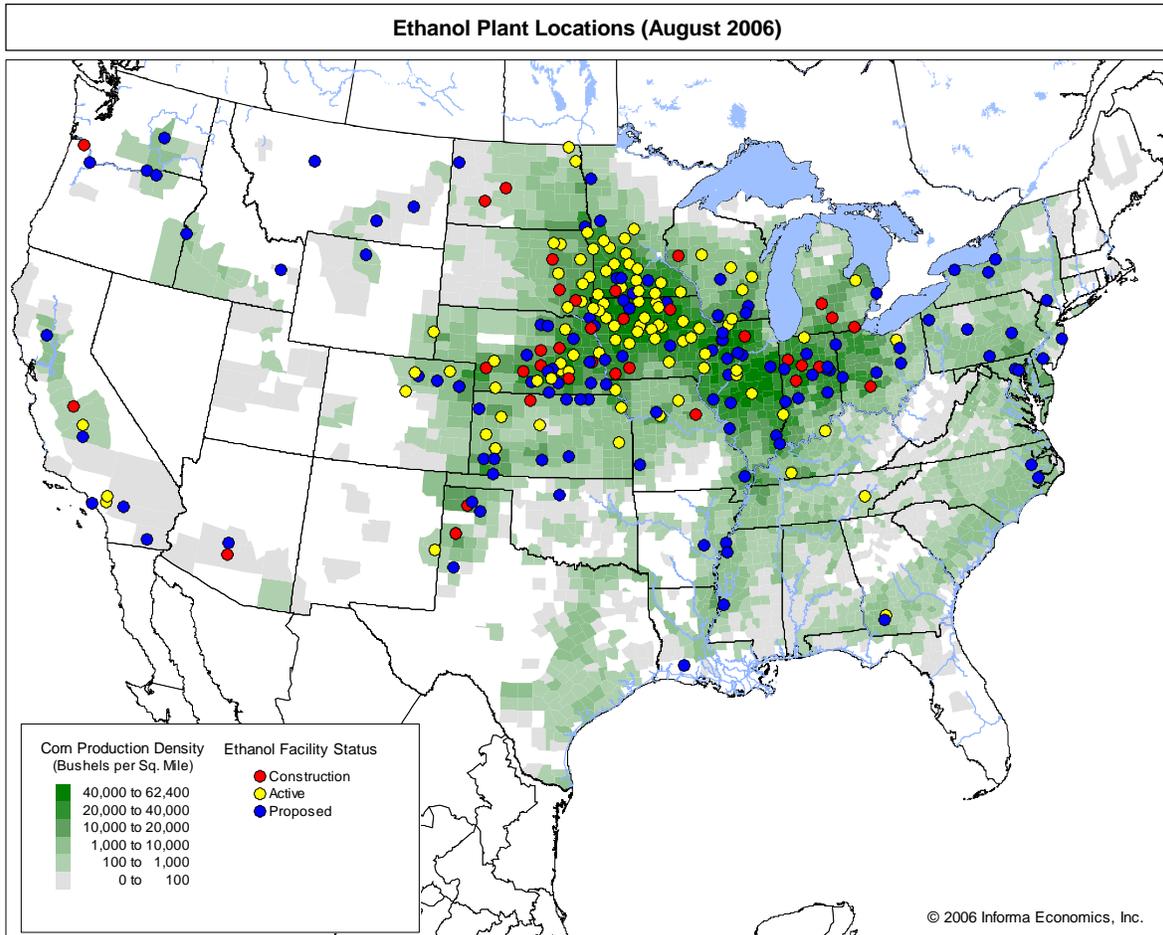
- In 2006: 4.0 billion gallons;
- In 2007: 4.7 billion gallons;
- In 2008: 5.4 billion gallons;
- In 2009: 6.1 billion gallons;
- In 2010: 6.8 billion gallons;
- In 2011: 7.4 billion gallons; and
- In 2012: 7.5 billion gallons

Starting in 2013, the share of the motor fuels market accounted for by renewable fuels in 2012 will have to be maintained. It should be noted that biodiesel also counts toward the RFS but it should only represent a small share of the renewable fuels used in the U.S.



Regarding the incentives for ethanol production, the American Jobs Creation Act of 2004 contains a tax credit, the Volumetric Ethanol Excise Tax Credit (VEETC), that provides an alcohol-fuel mixture excise credit of \$0.51 per gallon of ethanol. In addition to this credit, small ethanol producers (with a productive capacity of less than 60 million gallons) are eligible to receive a nonrefundable federal income tax credit equal to \$0.10 per gallon produced for the first 15 million gallons.

As of August 2006, the U.S. ethanol industry had a total capacity of 4.8 billion gallons. An additional 2.9 billion gallons of capacity is currently under construction.



The great majority of ethanol plants currently in activity are located in the Midwest where most of the corn production is concentrated. More plants, however, are now being built/proposed in locations closer to the different consumption markets.

Currently, there is no ethanol plant in the Northeast. However, four plants have been proposed in New York State, totaling 233.5 million gallons of capacity.

Competition

- New York State is a marginal corn producer and, therefore, ethanol plants located in the State will have to import most of their corn needs from the Corn Belt. As a consequence, an ethanol plant that would be built in Western New York State would primarily compete with others in the Midwest in terms of corn supply and access to the ethanol market, since plants in the Midwest export ethanol to the Northeast region.

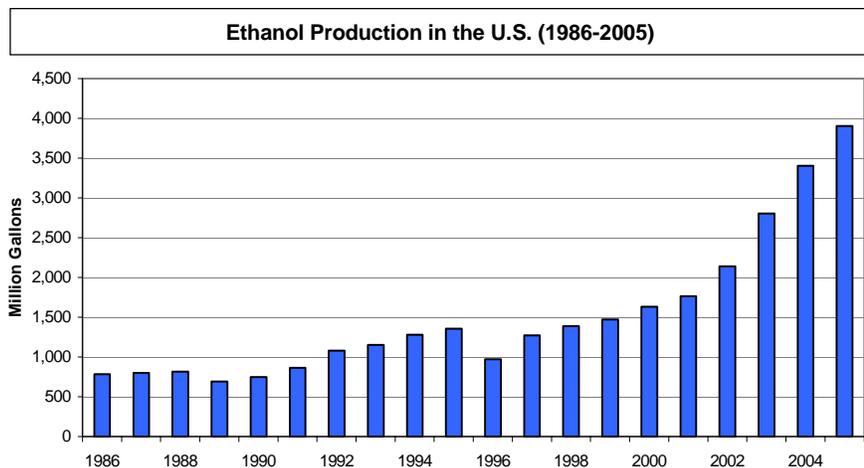
- The Canadian ethanol industry has historically been considerably smaller than the U.S. industry. A key development was the Government of Canada’s Ethanol Expansion Program (EEP), which was announced in 2003 and was intended to move the country toward the Government’s goal of 35% of gasoline being blended with 10% ethanol by 2010. Since the implementation of the EEP, federal policies toward renewable fuels have continued to evolve. A key development is that following the recent election and Stephen Harper’s rise to Prime Minister, the Government in May 2006 announced that it intends to set a 5% mandate (rather than a target) for renewable fuels usage in gasoline and diesel. In addition to the momentum at the federal level, important policies have been adopted by provincial governments. Ontario will require an average 5% ethanol blend starting January 1, 2007, and this will increase to a 10% ethanol blend in 2010; additionally, the province has established an Ontario Ethanol Growth Fund totaling C\$520 million over 12 years to assist producers in funding capital and operating costs (it also assists independent blenders of ethanol). Additionally, there are tax incentives for ethanol consumption at the federal level and in most major provinces. Ontario offer road tax exemptions on any ethanol used, regardless of source or blend level. The producer incentive ranges from 0 to C\$0.11 depending on market conditions; the incentive limited to Ontario plants.

Major Changes

- The Energy Policy Act of 2005 contained a Renewable Fuels Standards requiring a certain volume of renewables to be utilized in motor fuels in future years.
- MTBE was the predominant oxygenate used in the Reformulated Gasoline Program prior to 2003. However, MTBE has been found to pollute water and to be carcinogenic when inhaled at high doses. As a consequence, it has been banned or severely restricted in 25 states. MTBE is now replaced by ethanol.

Growth Trends

- Ethanol production has more than doubled between 2000 and 2005.
- Given current economics and the favorable policy environment, this growth trend is expected to continue.

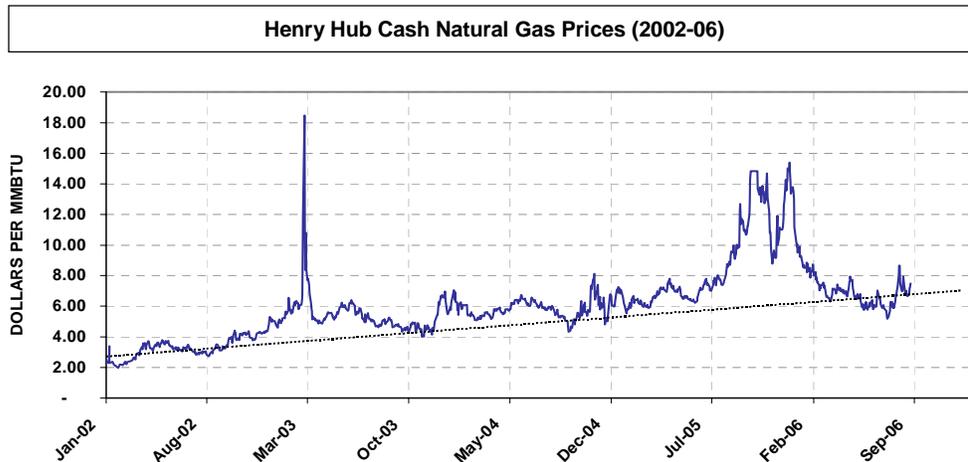


Source: Informa Economics

Challenges

- The continued growth in the ethanol industry implied by the RFS portion of the Energy Act of 2005 will bolster the consumption of corn over the coming decade. Additionally, consumption of corn in livestock and poultry feed is expected to continue its upward trend. As a consequence, and although corn acreage and production are expected to rise in the U.S., corn prices are forecast to increase.

- Energy also accounts for an important share of the ethanol production costs. Natural gas is the primary source used by the ethanol industry, and increase in prices negatively affect margins.



Source: Informa Economics, Reuters

Resources

- In 2005, Western New York State produced 12.9 million bushels of corn, which accounts for almost 23% of the State corn production. All the corn production in Western New York could theoretically supply the needs of a 36 mgy ethanol plant. Because this production is too limited to supply all the corn requirement of a plant, corn would have to be imported from the Corn Belt. Part of the local production, however, could be used, which would limit the overall procurement costs.
- As an ethanol plant would increase the local demand for corn, a local acreage response would be expected to increase corn production.

Employment

- An ethanol plant will require sophisticated management skills and access to semi-skilled labor.
- Depending on the plant size, 30 to 60 full-time employees would work at an ethanol facility.

Specific requirements

- Rail access, preferably to a class I carrier.
- Lake access would be preferable.
- Access to a source of energy, natural gas or coal.
- Access to large quantity of water for the ethanol production.

Potential Growth

- An ethanol plant located in Western New York would have the advantage of lower ethanol freight rates over a Midwest plant.
- In addition to domestic ethanol markets, an ethanol plant would be well positioned to sell ethanol into the Canadian market. Ethanol production and consumption have been limited in Canada in the past, but tax incentives and blending requirements on the federal and provincial levels are expected to expand the market significantly.
- An ethanol facility operating in Western New York would be well positioned with respect to DDGS marketing, as New York is the third largest dairy state. Western New York, in particular, is an important dairy area.

Competitive Benchmark

The following table benchmarks New York against Michigan and Ontario for ethanol production.

		New York	Michigan	Ontario
Market Overview				
Total Motor Gasoline Consumption	mgy	5,700	4,751	4,050
	CAGR (5 years)	0.1%	0.1%	1.4%
Total Ethanol Capacity ¹	mgy	0	50	217
Ethanol Production				
Capacity under Construction ¹	mgy	0	157	26
Ethanol Price	\$/Gallon	2.93 ²	2.70 ³	--
DDGS Potential	Thousand Tons	1,813	1,208	2,077
Inputs/Production Costs				
Corn Production	Million Bushels	54	289	219
	CAGR (5 years)	0.1%	9.7%	0.6%
Average Corn Price ⁴	\$/Bushel	2.41	2.01	2.34
Average Natural Gas Cost ⁵	\$ per Thousand Cubic Feet	9.62	7.76	7.59 ⁶
Electricity Cost ⁷	¢ per Kilowatthour	7.52	5.74	--
Production Costs ⁸	\$/Gallon	1.44	1.23	1.35
Fixed Asset Costs				
Plant and Equipment Cost ⁹	\$ Million	147	147	147
Transportation				
Transportation Cost to NY City	¢/gallon	7.29 ¹⁰	10.85 ¹¹	10.34 ¹²

Data are for 2005 unless noted otherwise.

mgy: million gallons a year

CAGR: compounded annual growth rate

--: Not available

¹ Capacity as of August 2006.

² Average Ethanol Rack Price in Upstate New York, Jan-Aug 2006

³ Average Ethanol Rack Price in Detroit, MI, Jan-Aug 2006

⁴ Three-year average 2003-2005

⁵ Two-year average 2004-2005

⁶ Niagara, Ontario.

⁷ Two-year average 2005-2006

⁸ Average production costs for a 100mgy ethanol plant.

⁹ Average plant and equipment cost for a 100mgy ethanol plant.

¹⁰ Transportation by rail (CSX) from Buffalo, NY to New York, NY. Fuel surcharges are not included.

¹¹ Transportation by rail (CSX) from Lansing, MI to New York, NY. Fuel surcharges are not included.

¹² Transportation by rail (CSX) from Windsor, ON to New York, NY. Fuel surcharges are not included.

Source: EIA, Informa Economics, USDA

Agricultural Profile: Biodiesel

Overview

Biodiesel is a clean-burning diesel replacement fuel that can be used in diesel engines, and which can be manufactured from vegetable oils, such as soy and palm oils. It can be used in its pure form (100% biodiesel or B100), or blended with petroleum diesel.

Biodiesel is produced through the transesterification of vegetable oils or animal fats. In this chemical reaction, the triglycerides of the feedstock react with methanol in presence of a catalyst to produce biodiesel. One gallon of feedstock yields one gallon of biodiesel. Soybean oil is the primary feedstock used by the U.S. biodiesel industry.

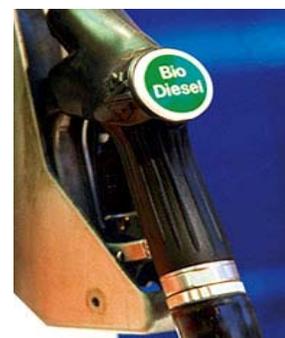


The American JOBS Creation Act of 2004 established the first national incentive for biodiesel consumption. The main attributes of this program are:

- The incentive involves a credit of \$1.00/gallon for biodiesel produced from “virgin” vegetable oils and animal fats and \$0.50/gallon for biodiesel produced from recycled oil and grease.
- The credit is available to an entity selling biodiesel at retail or, if the biodiesel is not sold via retail channels, to the entity using the biodiesel as a fuel in its business. Thus, similar to the manner in which the primary federal incentive for ethanol has functioned for years, the incentive is not paid directly to the producer but rather is directed to the biodiesel user, providing an incentive to use biodiesel and the means for biodiesel to be cost-competitive.
- The incentive took effect on January 1, 2005, and was originally set to expire two years later. The Energy Policy Act of 2005, however, provided the extension of the biodiesel tax credit through December 31, 2008.

The Energy Policy Act of 2005 was signed into law by President George W. Bush on August 8, 2005. A very important provision for biodiesel is a Renewable Fuels Standard (RFS) that would require motor fuels sold in the US to contain at least the following volumes of renewables in future years:

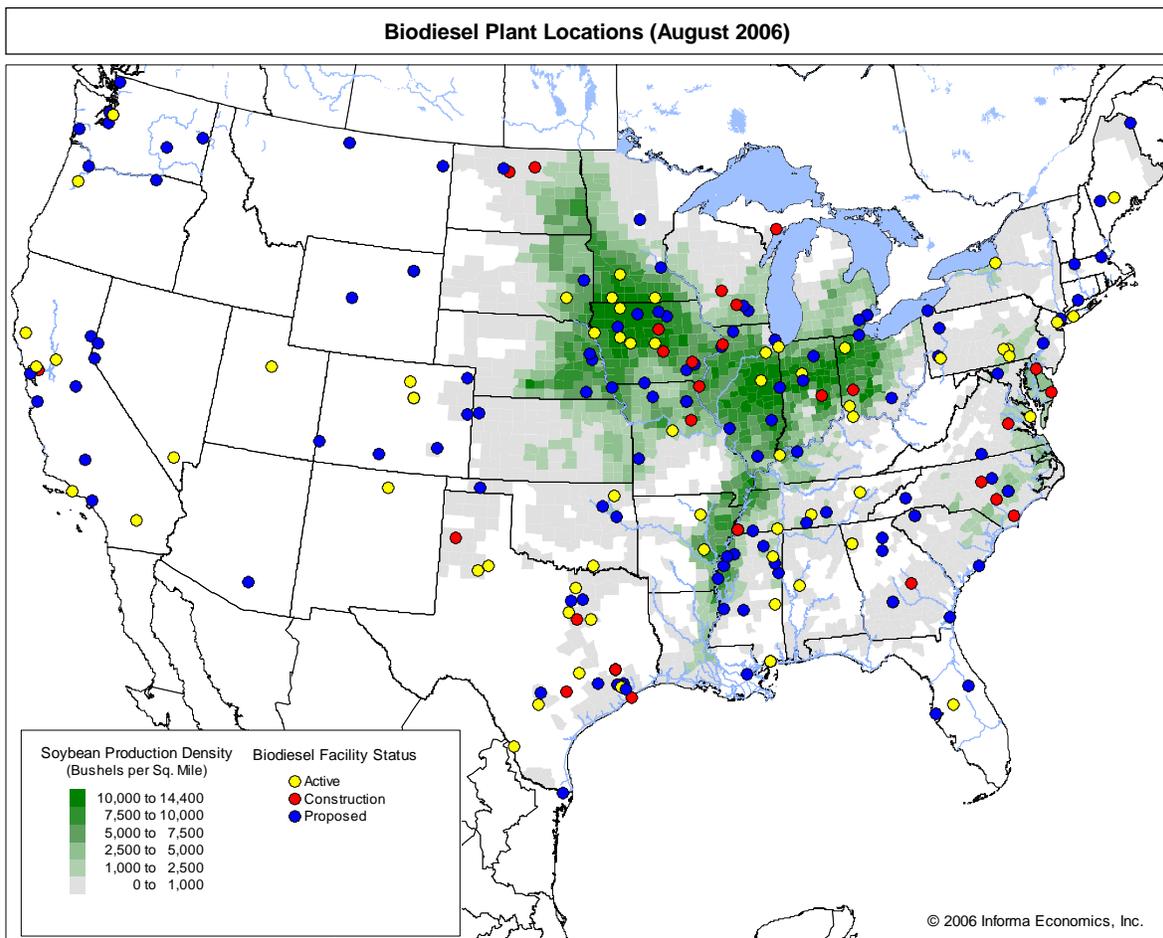
In 2006: 4.0 billion gallons;
In 2007: 4.7 billion gallons;
In 2008: 5.4 billion gallons;
In 2009: 6.1 billion gallons;
In 2010: 6.8 billion gallons;
In 2011: 7.4 billion gallons; and
In 2012: 7.5 billion gallons



Starting in 2013, the share of the motor fuels market accounted for by renewable fuels in 2012 will have to be maintained. It should be noted that ethanol also counts toward the RFS. Biodiesel is relatively small compared to ethanol, but coupled with the tax incentive the RFS should spur biodiesel capacity.

In addition to the federal tax incentive, small biodiesel producers (with a productive capacity of less than 60 million gallons) are eligible to receive a nonrefundable federal income tax credit equal to \$0.10 per gallon produced for the first 15 million gallons.

As of August 2006, the U.S. biodiesel industry had a capacity of 447 million gallons. An additional 483 million gallons of capacity is currently under construction. It has to be stressed that the production can differ significantly from the capacity insofar as many facilities, especially small ones, are not used at their full capacity, which would imply to operate the plant 24 hours a day and 7 days a week. Thus, total production for 2006 is expected to be 278 million gallons.



Currently, most of the biodiesel plants are concentrated in the Midwest where most of the soybean oil is produced. However, a large number of plants are located in the Northeast, South Central and West Coast regions of the country. In these regions, biodiesel production using yellow grease and/or animal fats is more popular and in some cases more feasible. It is important to note, however, that animal fats and yellow grease are produced in limited quantities, which limits their use to smaller biodiesel plants.

Further development is expected to arise in soybean production areas and in states that have passed incentives/mandates for biodiesel. For example, biodiesel production in Washington State is expected to spur as the state has recently passed a 2% biodiesel blend mandate.

In New York State, at least 2% of fuels used in the state fleet must be biodiesel by 2007; this percentage is set to continue to increase annually, such that by 2012, at least 10% of fuels used in the state fleet will be biodiesel. (Reference Executive Order 142, 2005). This initiative should increase local demand for biodiesel.

Currently, there are two biodiesel plants in New York State with a total capacity of 6 million gallons a year (mgy), and two proposed plants, with a total capacity of 35 mgy.

Two plants also are currently in activity in Northern Pennsylvania, these plants are relatively small and the total production does not exceed 2 mgy.

Competition

- The biodiesel industry is still in its infancy and the production is relatively limited. Although some states do export biodiesel, most of the production is sold locally. Competition would therefore come from other plants that would be bigger and/or closer to the consumption areas in New York State. Competition for feedstock might also arise, especially if yellow grease was to be used since available supply is limited.

Major Changes

- The Energy Policy Act of 2005 contained a Renewable Fuels Standards requiring a certain volume of renewables to be utilized in motor fuels in future years.
- The current federal tax credit incentives for biodiesel are set to expire at the end of 2008. These incentives, however, are expected to be extended, which should allow further expansion of the biodiesel industry.

Growth Trends

- Biodiesel production has been soaring in the last few years, from 25 million gallons in 2004 to an expected 278 million gallons in 2006. Given the current economics and the favorable policy environment, this growth trend is expected to continue. Biodiesel production, however, should somewhat slow down in the future as the industry becomes more mature.

Challenges

- The continued growth in the ethanol industry will bolster the consumption of corn and could induce some acreage shift between soybean and corn, which could limit the availability of soybean oil.
- At the current price of crude oil at above \$60, the viability of biodiesel production economics is improved. However, there is still a need for tax incentives for biodiesel to be competitive with petroleum diesel. The long-term viability of the biodiesel industry is dependent on the U.S. energy policy and tax incentives.

Resources

- Growth in the biodiesel sector can increase the supply of U.S. soybean oil from increased planted soybean acreage (or acreage shifts from wheat or other small grains); increased crushing volume and capacity; and supply shifts from other uses (e.g., feed) to biodiesel. Soybeans are the major oilseed currently produced in New York. While oilseed crops have never been grown extensively in New York State, the area devoted to soybeans has increased significantly over the past ten years, from 100,000 acres in 1995 to 190,000 acres in 2005.
- In the long term, imports of feedstock, particularly palm oil, can provide additional supplies for the biodiesel market. Palm oil is priced competitively with soybean oil and has ample exportable supplies and growth prospects, especially in Southeast Asia. Prospects for a palm oil-based biodiesel plant are better in oilseed-deficit regions or plants near entry points for imports. The U.S. imported 850 million pounds of palm oil in 2004/05, and this is likely to increase.

Employment

- A biodiesel plant will require sophisticated management skills and access to semi-skilled labor.

Specific requirements

- Rail access, preferably to a class I carrier.

Potential Growth

- The market for diesel fuel in New York is substantial. In 2004, total diesel fuel use was estimated at 1.7 billion gallons; on-highway diesel fuel in particular was 1.4 billion gallons. A biodiesel plant located in Western New York would have the advantage of lower freight rates over a Midwest plant to access this market.
- In addition to domestic biodiesel markets, a biodiesel plant would be well positioned to sell biodiesel into the Canadian market since the use of biodiesel in Canada to date has been in large part imported.

Competitive Benchmark

The following table benchmarks the State of New York against Illinois and Michigan for biodiesel production.

		New York	Illinois	Michigan
Market Overview				
Total Diesel Fuel Consumption	mgy	1,544	1,957	1,247
	CAGR (4 years)	9.9%	7.0%	3.8%
Total Biodiesel Capacity	mgy	6	31	0
Biodiesel Production Capacity under Construction	mgy	0	0	5
Inputs/Production Costs				
Average Soybean Oil Price	¢/lb	30.32 ¹	27.04 ²	27.48
Average Natural Gas Cost³	\$ per Thousand Cubic Feet	9.62	9.02	7.76
Production Costs⁴	¢/gal of biodiesel	59.8	56.5	57.0
Fixed Asset Costs				
Plant and Equipment Cost⁴	\$ Million	26	26	26
Transportation				
Transportation Cost to NY City	¢/gallon	6.82 ⁵	7.47 ⁶	7.55 ⁷

Data are for 2005 unless noted otherwise.

mgy: million gallons a year

CAGR: compounded annual growth rate

¹ Central Illinois prices, three-year average, 2003-05.

² New York harbor prices, three-year average, 2003-05.

¹ Central Michigan price estimate, 2003-05 average.

³ Two-year average 2004-2005

⁴ Average cost for a 30 mgy biodiesel plant.

⁵ Transportation by rail (CSX) from Buffalo, NY to New York, NY. Fuel surcharges are not included.

⁶ Transportation by rail (CSX) from Chicago, IL to New York, NY. Fuel surcharges are not included.

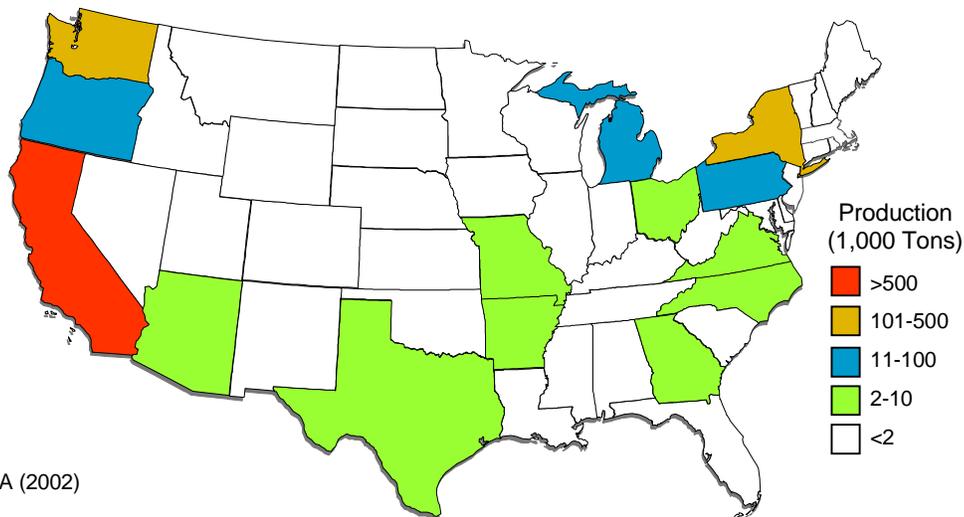
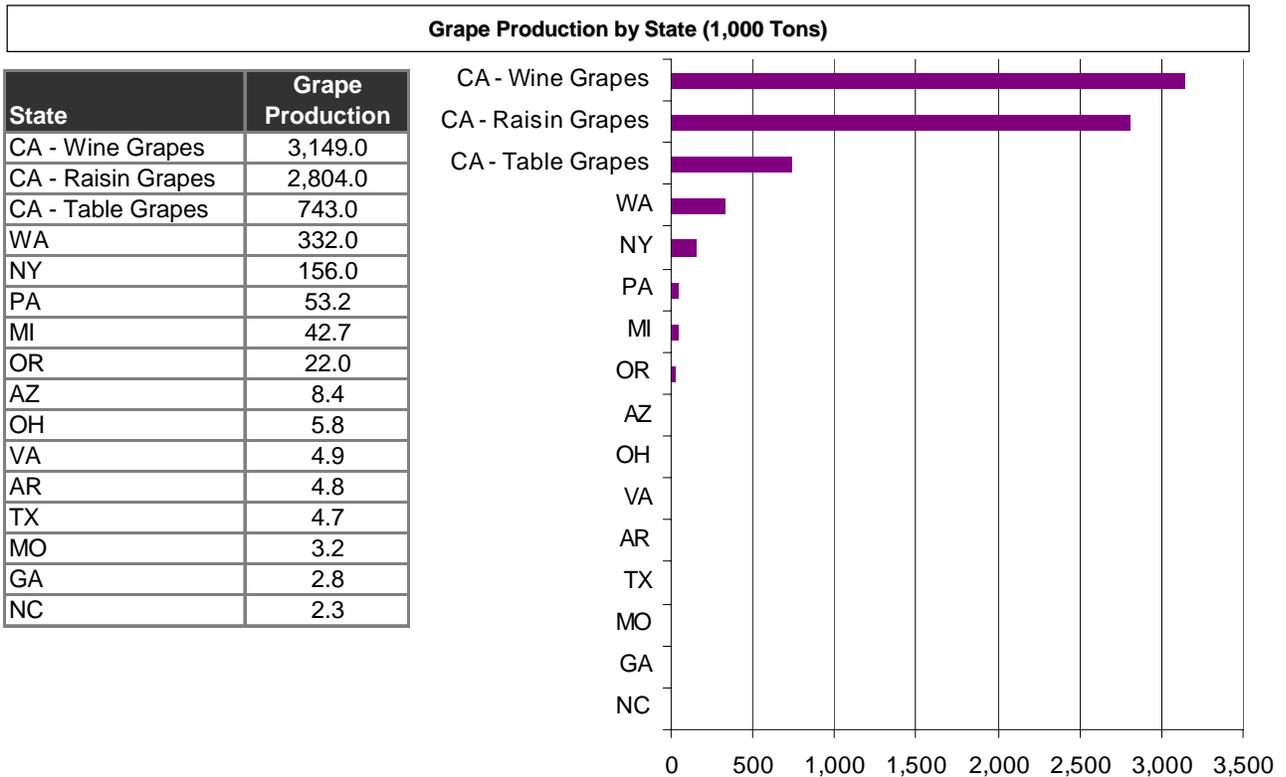
⁷ Transportation by rail (CSX) from Lansing, MI to New York, NY. Fuel surcharges are not included.

Source: EIA, Informa Economics, USDA

Agricultural Profile: Grapes

Overview

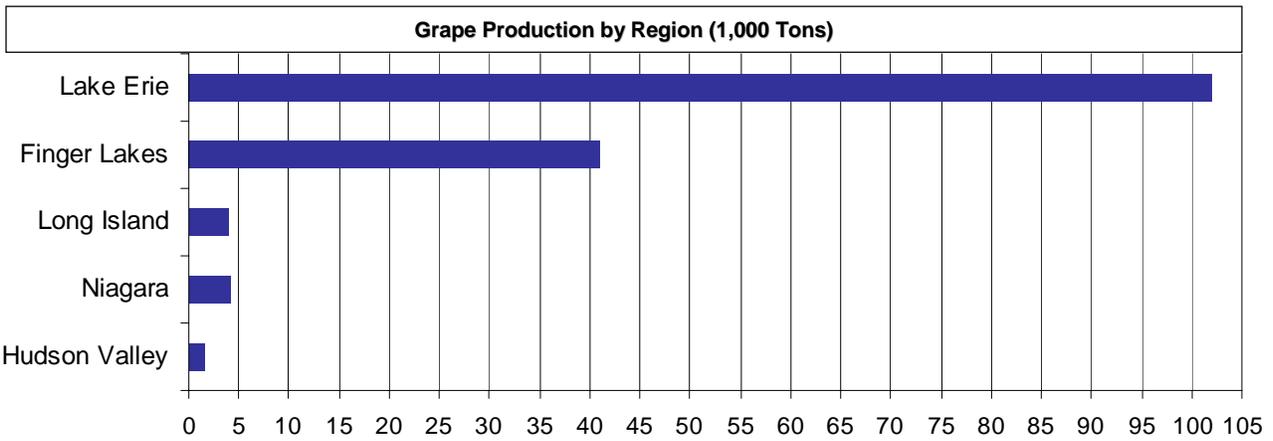
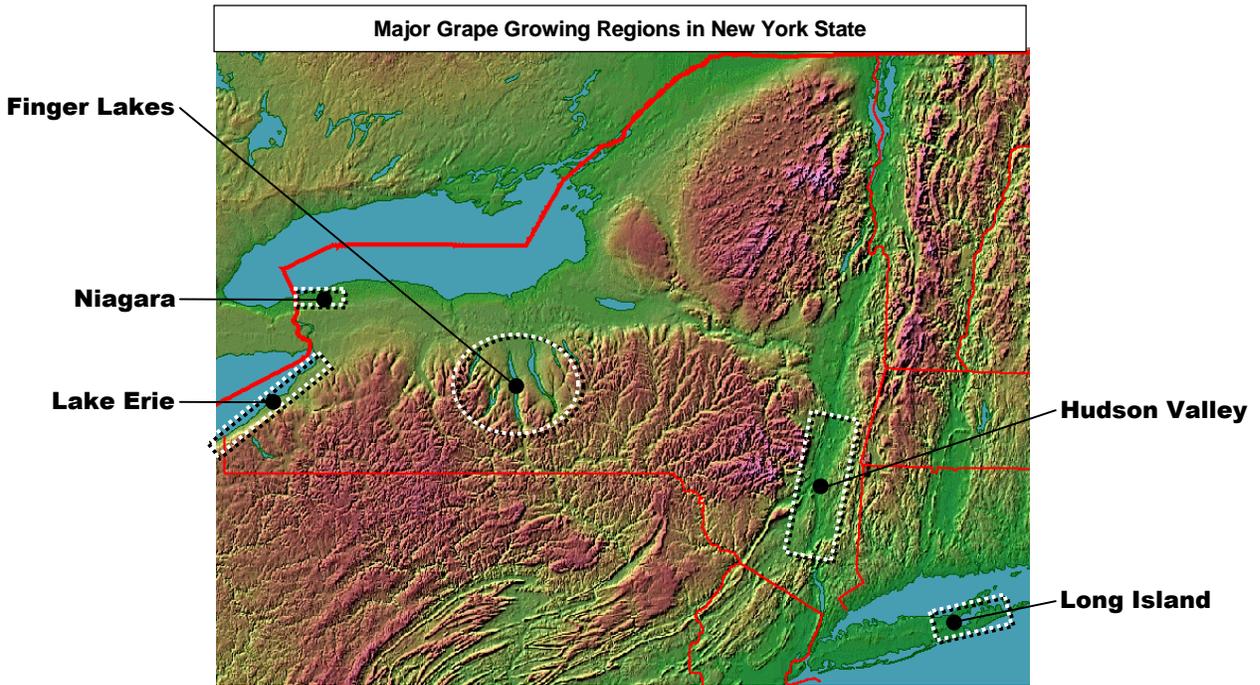
New York State is the third largest grape producing state behind California and Washington. California production is divided into wine grapes (47%), raisin grapes (42%) and table grapes (11%). Washington State's production is divided between juice grapes (65%) and wine grapes (35%). New York's production is about half of Washington State but nearly three times the size of Pennsylvania – the next largest producer. Grapes that compete in the U.S. market also come from Canada (southern Ontario) as well as juice concentrates from Brazil.



Source: USDA (2002)

Agricultural Profile: Grapes

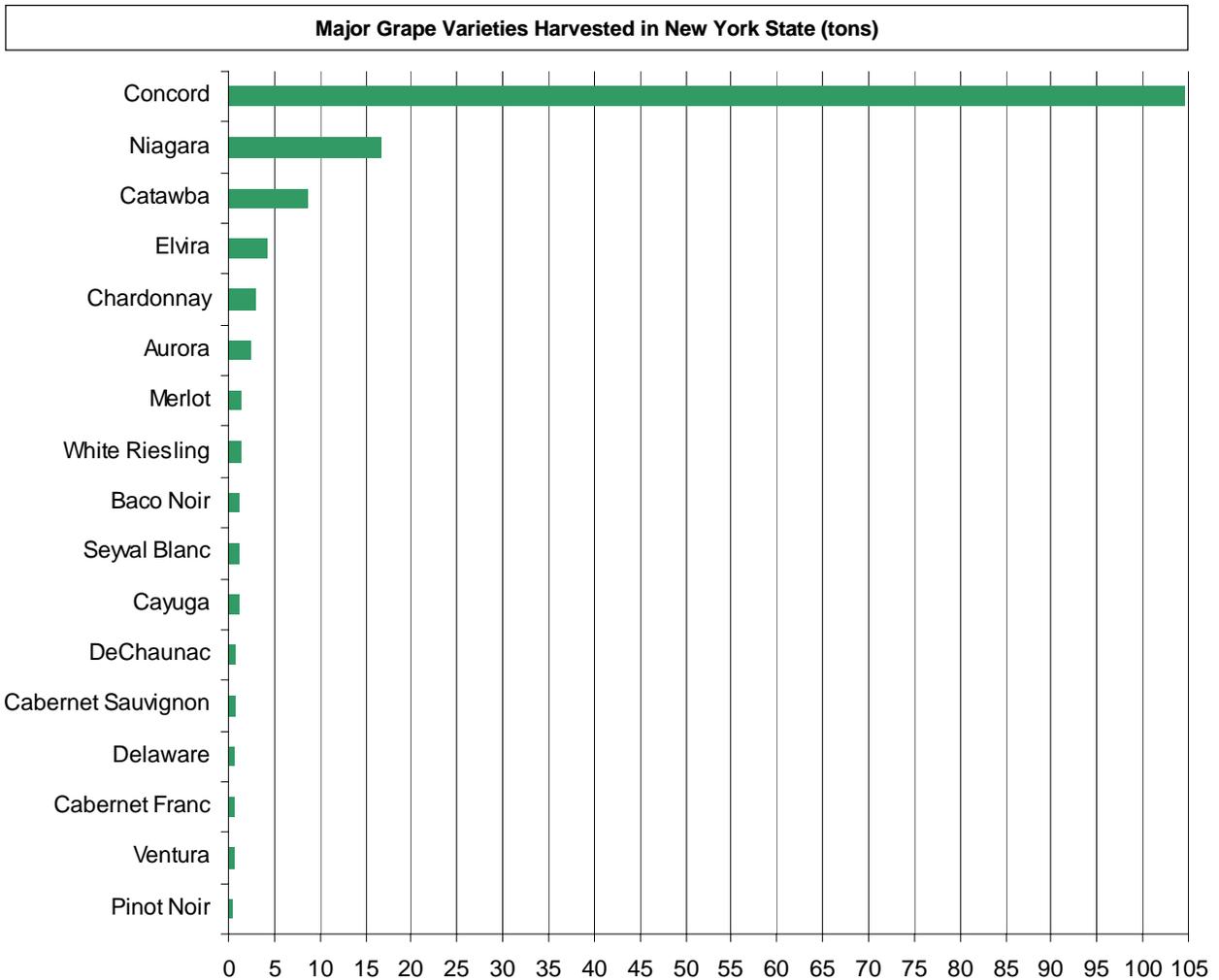
New York State produces over 150 million tons of grapes from vineyards in five locations within the state as noted in the figure below.



Source: NYS Dept of Ag and Markets (2001)

Agricultural Profile: Grapes

New York State produces over 100,000 tons of Concord grapes (red) followed by Niagara grapes (white) that are utilized for both juice and wine. The wineries and their supplier vineyards continue to expand the number and variety of white and red wine grapes in order to produce a diversity of table wines.



In Western New York State produces the bulk of the Concord and Niagara varieties with about 50% of 105,000+ tons of annual production going to wine production and 50% to juices, jams, jellies and related products. Welch Foods processes approximately 50% of the juice/jam crop at their plants in Westfield, NY and North East, PA. The balance of the juice is processed by Cliffstar Corporation in Dunkirk, Carriage House Companies (Ralcorp company) in Fredonia as well as other regional processors.



Cliffstar Corporation (Private label juice processor in Dunkirk, NY)

Agricultural Profile: Grapes

The Lake Erie Region has eleven wineries and the Niagara Region has seven wineries with plans for additional operations in the Niagara Region. Over the past 40 years, there has been significant replanting of Concord grapes with other varieties more value to the production of table wines spurred on by the Farm Winery Act of 1976.

Competition

Western New York competes for juice grape-related products with Washington State, Pennsylvania (primarily Erie County), Michigan and southern Ontario Province. Due to the growing conditions of the Yakima Valley of Washington (more sun and controlled watering), the Concord grapes have a higher sugar content and lower acidity that makes them more desirable for processing.

In the wine segment, Western New York is further behind the market maturity of the Finger Lakes area in terms of market identify and marketing activities. Although the New York State wine industry is expanding and making progress, it is still well behind California's Sonoma, Napa and San Joaquin Valleys.

Major Changes Over the Past 10-15 Years.

There have been several changes in the demand for grape-related juices/jams as well as wines over the past 15 years. Welch Foods has engaged in an expanded line of blended grape with other fruit juices just as Ocean Spray has blended other fruits with its core cranberry juice. The more recent release of announcements from medical research that red grape juice is high in antioxidants and reduces blood clotting while red wine aides in maintaining a healthy heart have been significant factors in the increased demand for grape products.

Growth Trends

From a wine perspective, these has been a trend in expanding wine options from fruity dessert wines to drier table wines as the American taste for wine broadens. New York State is taking ideas from California with wine tours and festivals focused around a series of wineries and broadening the experience with Bed & Breakfast options, other cultural and agricultural-related events as well as other retail options for agricultural products (e.g, the farm stands).

The wine and juice industry is segmented similar to the way of the micro-breweries with many more options and niches in tastes being developed as well as the "all natural" and "organic" lines of products. Wine continues to gain in popularity as a recreation beverage with some health benefits when engaged in moderation and juices growth from a nutrition perspective being promoted by USDA and other juice producers/cooperatives (orange and cranberry).

Agricultural Profile: Grapes

Challenges in Operating a Vineyard and Winery

The weather can significantly impact grape harvest volume and grape quality which makes farming in the Yakima Valley of Washington State a little more predictable. For the wine industry to expand and prosper there are three elements that need to be considered:

- The investment of capital in efficient production equipment and better structures for holding wine tasting events – not the use of an old farm houses
- The need to engage in a grape replacement program to replace Concord with other wine-oriented grape stock
- Continue to heavily market the area with its wine trails, events, B&B's, other farm retail and related activities – the merging of ag tourism with overall tourism activities. The current draw to the southern portions of the region are from northern Pennsylvania and Ohio. Niagara Falls area to the north has an international draw that focused primarily on the falls.

Resources That Are Missing or Could Be Located in Western New York

Additional food processors that represent niche product lines and more wineries throughout the region.

Employment Level

The total grape farming and processing industry has employment <5,000

Specific Requirements for Facilities and Utilities

Expanding the wine industry is a fairly capital-intensive investment for small operations and requires the purchase of large stainless steel tanks, process equipment and bottling/labeling equipment along with construction of the wine tasting facility.

Potential for Growth

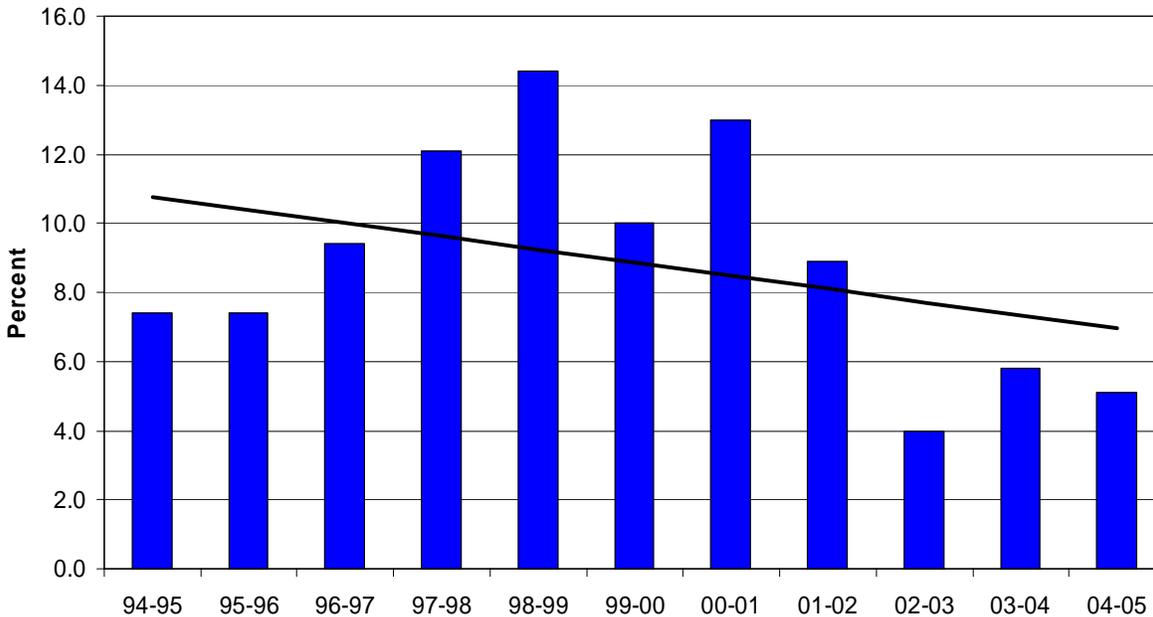
The region has significant potential for growth related to market identity and additional wine production. There is an opportunity for expansion of vineyards in the Niagara area and for Concord grape replacement in the Lake Erie region.

Returns to Wineries and Size of Operation

Wineries of all sizes have seen their profits before taxes average at 8.9% over a 10 year period beginning in FY 1994/95. Margins peaked in FY 1998/99 to 14.4% then dropped to a ten-year low in FY 2002/03 at 4%. Profits before taxes have declined at an annual growth rate of 4% over ten years. Figure 1 on the next page illustrates that trend.

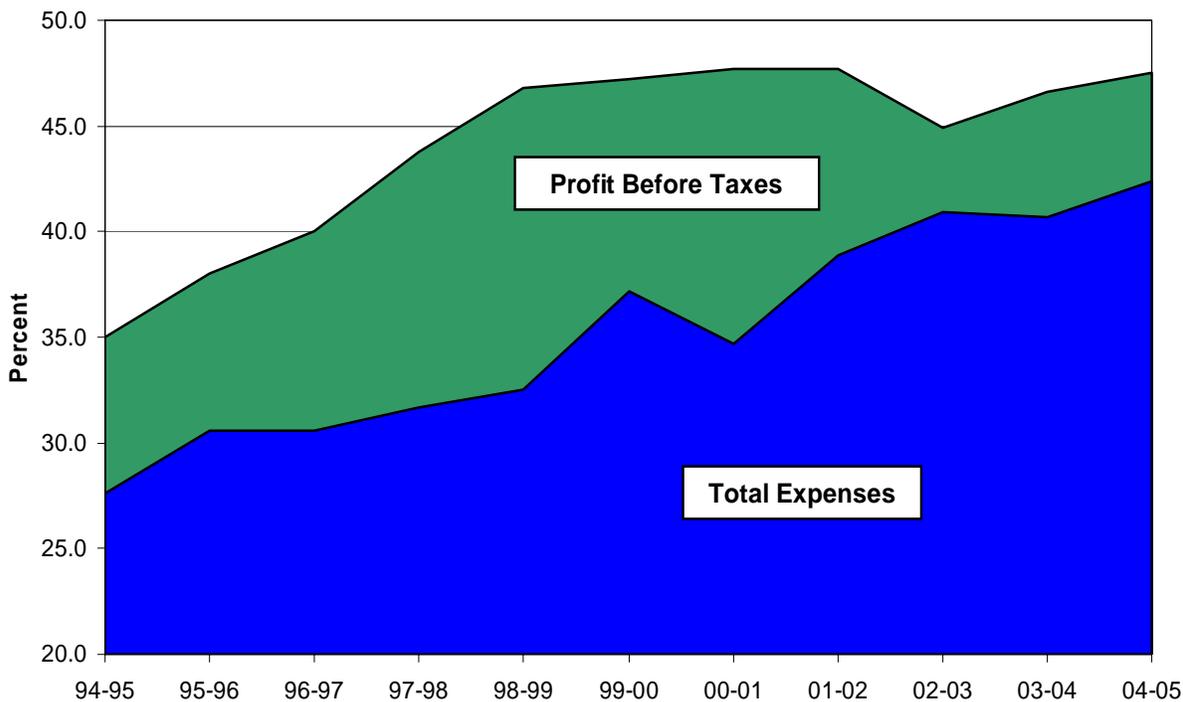
On average, total expenses have been growing at a faster rate than gross profits, thus profits after taxes have been squeezed. This can also be seen in figure 2 on the following page.

Wineries: National Average, Profit Before Taxes



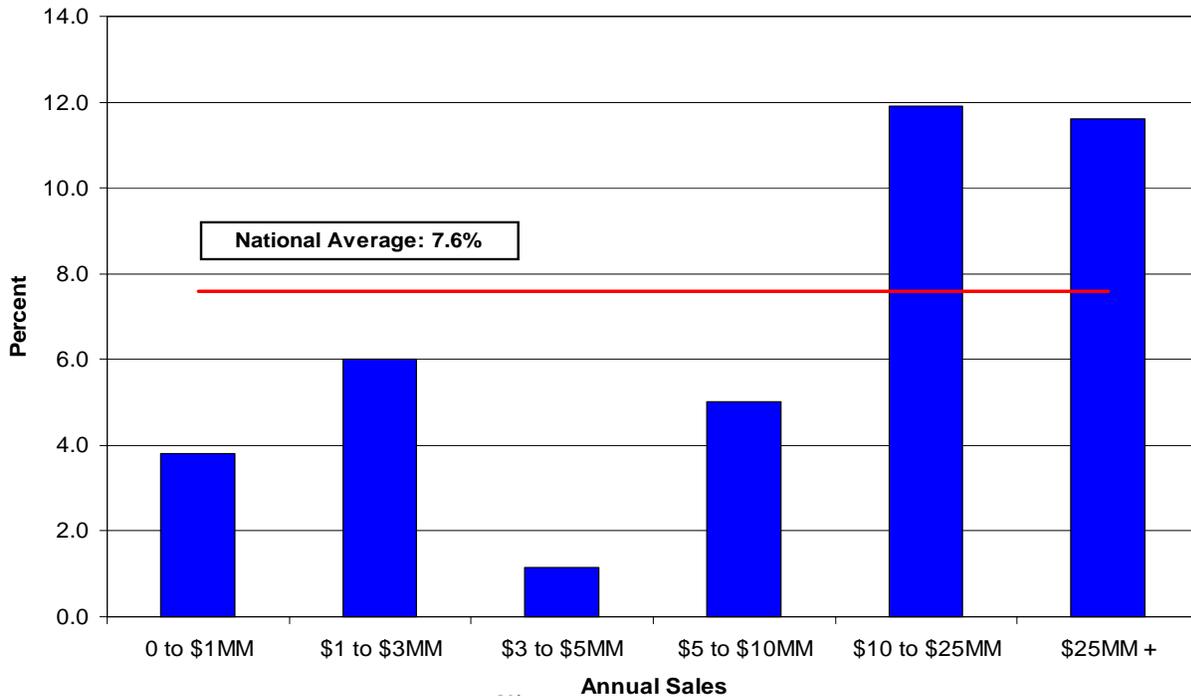
Source: Risk Management Association, RMA

Wineries: Profits Before Taxes vs. Total Expenses



Source: Risk Management Association, RMA

**Five Year National Average, Profit Before Taxes by Operation Size
(Annual Sales, MM=Millions)**



Source: Risk Management Association, RMA

Although profits before taxes at the national level have decreased within the last 10 years, smaller niche and larger wineries have enjoyed larger margins than medium sized wineries. Figure 3 shows that companies between \$10-25 million and \$25 million plus have enjoyed profit margins well above the 5 year national average while wineries in the \$0-1 million and \$1-3 million sales range had margins between 3.8% and 6%, respectively.

Winery Benchmark

		New York	California	Michigan	Ontario
Market Overview					
Total Grape Production for Wine Use	Tons	40,000	3,755,000	4,600	20,025 ¹
	AAGR (5 years)	-2.2%	3.8%	16.7%	-12.6%
	U.S. Rank	3rd	1st	8th	
Employment Level	Number	1,788	24,925	116	998 ²
	AAGR (5 years)	--	6%	--	--
Establishment Level	Number	93	889	29	90 ⁺
	AAGR (5 years)	--	8.73%	--	--
Variable Costs					
Grapes	\$/Ton	219	583	1,020	1,134
	AAR (5 years)	-12.7%	0.0%	1.4%	--
Cropland	\$/Acre	1,820	8,620	3,000	35,000 ³
	AAR (10 years)	6.13%	5.24%	8.25%	
Labor	\$/Week	1,013	886	490	513 ⁴
Electricity Cost⁵	¢ per Kilowatthour	7.52	8.50	5.74	--
Transportation					
Transportation Cost to NY City	\$	765 ⁶	5,824 ⁷	1,522 ⁸	--

Data are for most recent year available

¹ Total Grapes Processed for Wine (2005)

² Winery operation employment

³ Estimate based on conversations with Canadian wine industry experts

⁴ Based on 2006 weekly averages from Human Resources and Skills Development Canada

⁵ Two Year Average 2005-2006

⁶ Transportation rate from Buffalo, NY to Newark/Elizabeth, NJ. Standard non-refrigerated truckload rate

⁷ Transportation rate from Santa Maria, California to Newark/Elizabeth, NJ. Standard non-refrigerated truckload rate

⁸ Transportation rate from Suttons Bay, Michigan to Newark/Elizabeth, NJ. Standard non-refrigerated truckload rate

AAGR Average Annual Growth Rate

Source: EIA, NASS, BLS, HRSDC

Appendices

Appendix A: Factors of Success Matrix Evaluation

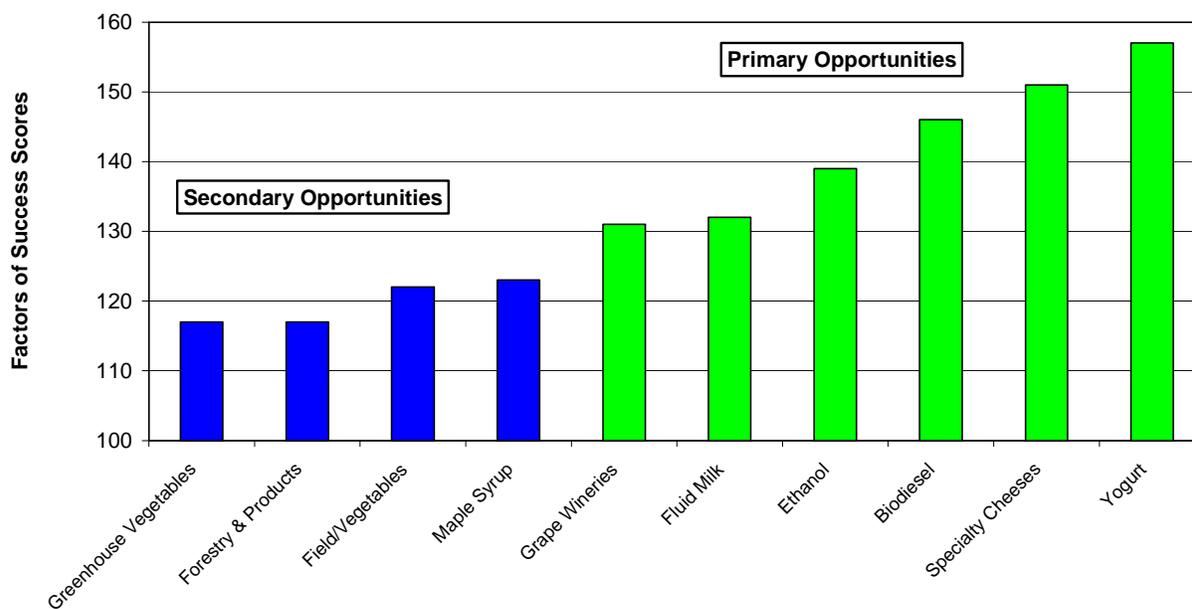
Factors of Success Matrix Discussion

- Based on the week of company interviews and focus group discussions coupled with analytical desk research, ten different agricultural opportunities were chosen as the most desirable for economic development consideration in the region.
- The ten agricultural opportunities identified were greenhouse vegetables, forestry & products, field vegetables, maple syrup, grape wineries, fluid milk, ethanol, biodiesel, specialty cheeses and yogurt.
- In order to identify which opportunities was the most desirable, a “factors of success matrix” were developed. The matrix considered nineteen factors/variables such as sector growth rate, capital investment requirements and proximity to demand markets. Each of the factors was given a “relative weight” of high, medium or low importance. The factors were then assigned scores ranging from a high of “4 = Very Attractive” to a low of “1 = Not Attractive.”
- The scoring process was conducted in a delphi manner where the independent expert opinions/scores of five different consultants were gathered for each of the sectors and their respective variables.

Factors of Success Matrix Discussion

- Weighted scores were then compiled for each of the sectors and ranked. A summary of the results is found on the following page. It should be noted that the ranking of the ten sectors into primary and secondary opportunities is a generalized proxy for economic development consideration. In other words, all ten sectors have been selected for their potential development potential, however, the primary sectors should be the initial areas of development by BNE.
- The analyses conducted in this section formed the foundation for further evaluation in the executive summary section.

Summary Results of the Factors of Success Matrix Analysis



Source: Informa Economics

Summary Results of the Factors of Success Matrix Analysis

Rank	Agricultural Sector	Score
1	Yogurt	157.0
2	Specialty Cheeses	151.0
3	Biodiesel	146.0
4	Ethanol	139.0
5	Fluid Milk	132.0
6	Grape Wineries	131.0
7	Maple Syrup	123.0
8	Field/Vegetables	122.0
9	Forestry & Products	117.0
10	Greenhouse Vegetables	117.0

Source: Informa Economics

Factors of Success Matrices

<u>Weight</u>	<u>Relative Weight</u>	<u>Factor</u>	<u>Yogurt</u>	<u>Fluid Milk</u>	<u>Ethanol</u>	<u>Biodiesel</u>
3	High	Scale of Opportunity	3	3	4	3
3	High	Sector Growth Rate	4	2	4	4
1	Low	Level of In-State Competition	3	3	4	4
3	High	Level of Foreign Competition	4	4	3	3
2	Medium	Proximity to Supply Market	4	3	2	2
3	High	Proximity to Demand Market	4	4	4	4
1	Low	Capital Investment Requirements	3	3	2	3
3	High	Ability to Access to Capital	3	2	4	3
1	Low	Technological Volatility	3	3	3	3
3	High	Impact on Quality of Life	3	3	2	3
3	High	Ability to Build on Existing Business	4	4	1	1
2	Medium	New Entrant Barriers to Entry	3	2	4	4
3	High	Market Barriers to Entry	3	3	3	4
3	High	Impact of Workers' Compensation on Firms	3	2	2	3
3	High	Impact of State and Local Taxes	3	2	4	4
3	High	Sensitivity to Energy Input Costs	3	3	2	3
2	Medium	Ability to Leverage Knowledge Base	4	4	1	1
2	Medium	Access to Skilled Labor	3	3	4	4
3	High	Sensitivity to Lack of Unskilled Labor	3	1	3	3
Score		Overall Attractiveness in Western New York	157	132	139	146

- 4 = Very Attractive
- 3 = Moderately Attractive
- 2 = Questionable
- 1 = Not Attractive

Source: Informa Economics

Factors of Success Matrices

<u>Weight</u>	<u>Relative Weight</u>	<u>Factor</u>	<u>Greenhouse Vegetables</u>	<u>Forestry & Products</u>	<u>Winery</u>	<u>Specialty Cheese</u>
3	High	Scale of Opportunity	3	3	4	3
3	High	Sector Growth Rate	4	1	3	4
1	Low	Level of In-State Competition	4	2	3	3
3	High	Level of Foreign Competition	2	1	1	3
2	Medium	Proximity to Supply Market	2	4	4	4
3	High	Proximity to Demand Market	4	3	4	4
1	Low	Capital Investment Requirements	3	2	2	3
3	High	Ability to Access to Capital	2	2	3	3
1	Low	Technological Volatility	2	3	2	3
3	High	Impact on Quality of Life	3	4	4	3
3	High	Ability to Build on Existing Business	2	3	4	4
2	Medium	New Entrant Barriers to Entry	2	2	3	3
3	High	Market Barriers to Entry	3	2	2	3
3	High	Impact of Workers' Compensation on Firms	2	1	2	2
3	High	Impact of State and Local Taxes	2	2	2	3
3	High	Sensitivity to Energy Input Costs	1	3	2	3
2	Medium	Ability to Leverage Knowledge Base	2	4	4	4
2	Medium	Access to Skilled Labor	3	3	3	3
3	High	Sensitivity to Lack of Unskilled Labor	2	3	1	3
<u>Score</u>		Overall Attractiveness in Western New York	117	117	131	151

- 4 = Very Attractive
 3 = Moderately Attractive
 2 = Questionable
 1 = Not Attractive

Source: Informa Economics

Factors of Success Matrices

<u>Weight</u>	<u>Relative Weight</u>	<u>Factor</u>	<u>Maple Syrup</u>	<u>Field/Vegetables</u>
3	High	Scale of Opportunity	1	3
3	High	Sector Growth Rate	2	4
1	Low	Level of In-State Competition	3	3
3	High	Level of Foreign Competition	1	2
2	Medium	Proximity to Supply Market	4	4
3	High	Proximity to Demand Market	3	3
1	Low	Capital Investment Requirements	4	3
3	High	Ability to Access to Capital	1	1
1	Low	Technological Volatility	4	3
3	High	Impact on Quality of Life	4	4
3	High	Ability to Build on Existing Business	4	4
2	Medium	New Entrant Barriers to Entry	2	2
3	High	Market Barriers to Entry	2	2
3	High	Impact of Workers' Compensation on Firms	4	1
3	High	Impact of State and Local Taxes	2	2
3	High	Sensitivity to Energy Input Costs	3	2
2	Medium	Ability to Leverage Knowledge Base	3	4
2	Medium	Access to Skilled Labor	2	3
3	High	Sensitivity to Lack of Unskilled Labor	3	1
Score		Overall Attractiveness in Western New York	123	122
4	=	Very Attractive		
3	=	Moderately Attractive		
2	=	Questionable		
1	=	Not Attractive		

Source: Informa Economics

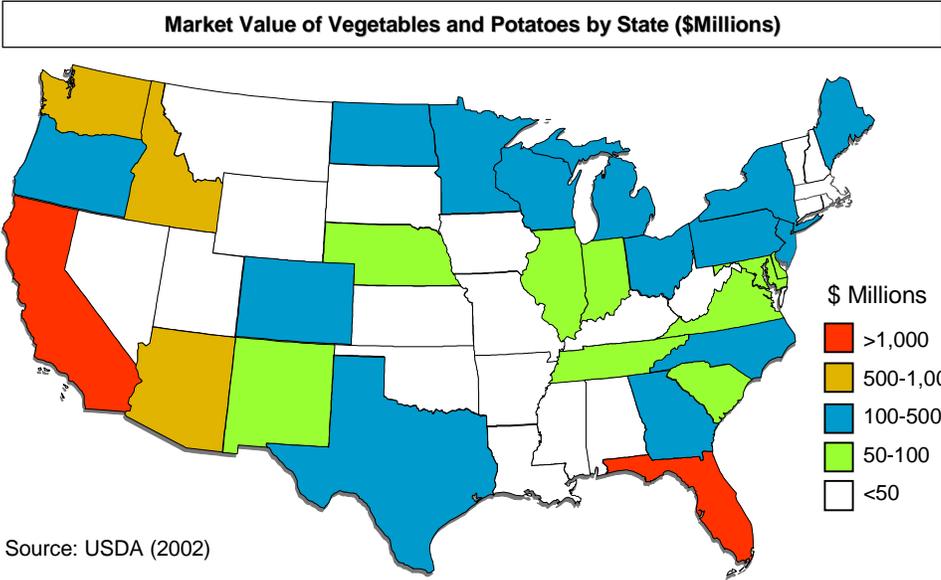
Appendix B: Secondary Western New York Agricultural Opportunities Profile Overviews

- **Vegetables**
- **Forestry & Wood Products**
- **Greenhouse & Organics**
- **Maple Syrup**

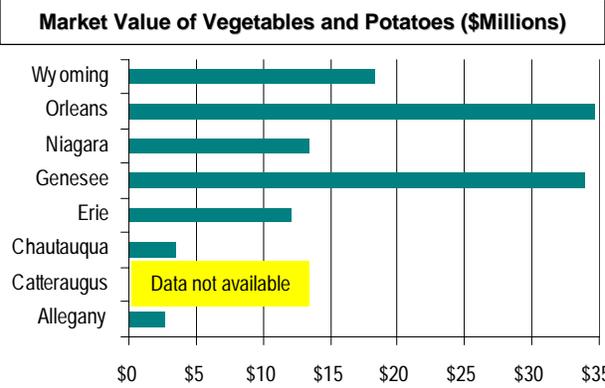
Agricultural Profile: Vegetable Crops

Overview

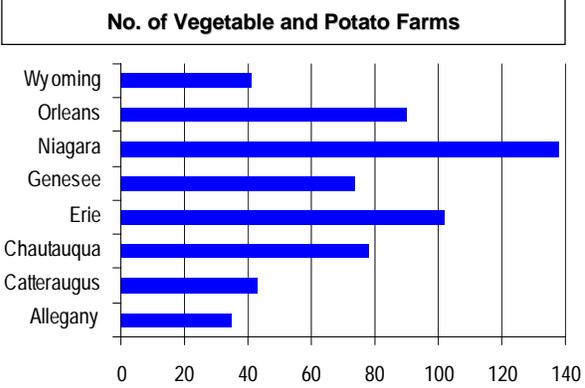
New York State produces over \$320 million of vegetables and potatoes (see figure below), of which, \$120 million are produced in Western New York. Crops include corn, potatoes, onions, beans, squash, peppers, tomatoes, peas, egg plant, pumpkins, etc.



The largest producing counties in the region are Orleans and Genesee Counties with over \$30 million in revenue followed by Wyoming, Niagara and Erie. The counties with the largest number of farms are Niagara, Erie and Orleans.

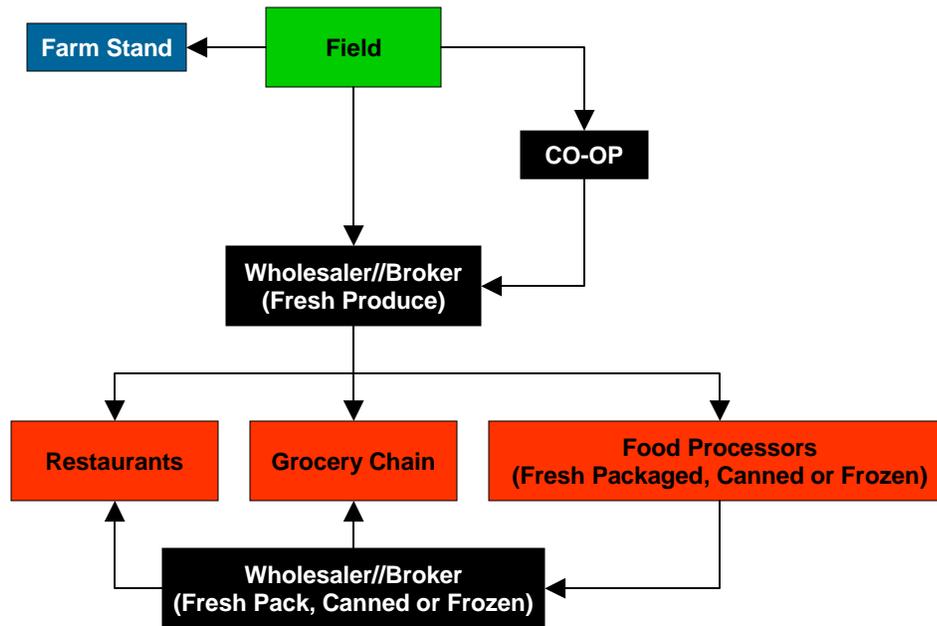


Source: USDA (2002)



Source: USDA (2002)

The flow of crops from farm to market follow several defined routes as noted below:



Only about 10 – 25% of local farm produce is sold at farm stands (depending on farm and type of produce) with the balance going to wholesalers and brokers that sell to restaurants, grocery chains and food processors. Historically, local farmers in Western New York State sold a substantial quantity of their fresh produce to small corner grocers throughout the City of Buffalo. In the 1940's and '50's larger chains such as A&P established larger size/more inventory, self-service grocery stores with lower prices that replaced the corner groceries. They were good with canned and packaged foods but limited in fresh vegetables. To fill this gap, many area farmers established farm stands to market locally available fruits and vegetables in season.

Profile on Farm Stands

The farm stand has evolved into a significant presence in Western New York with hundreds stands along primary and secondary highways throughout the region. They are not only an outlet for farm produce but also an important sales channel for other locally-made products that help market the region and extend the farm stand season from the typical July through October season. Examples of product categories include the following:

Local Fruits & Vegetables	Non-Local Fruits & Vegetables	Honey, Cider, Maple Products, Cheese, etc.	Pumpkins	Bedding Plants & Flowers
Local Baked Goods	Local Candy & Chocolates	Handcrafts, Local Wool, etc.	Fresh Meats	Books, Seeds, Accessories

Farm stand traffic includes not only the local regulars but tourists and those attending local festivals and special events. Farm stands also attract customers by having animals to view, farm tours and pick-you-own options.



Examples of small farm stands located within the region.



Example of an expanded farm stand with an attached garden center.

Competition

In the 1960's Tops Friendly Markets established an area chain with its headquarters in Williamsville and in the 1970's Wegmen's (headquartered in Rochester) entered the Buffalo market. Over the past 10 – 15 years, the chains have greatly expanded the average store size and now provide significant floor space for a diverse array of year-round fruits and vegetables sourced from national (Florida, California, Southeast and Northeast) and international (primarily Mexico and South America) sources. In some respects, the regional grocery chains are an opportunity for sales growth for farming operations but at the peril of the local farm stand.

The loss of population base within the region, the opportunity for one-stop shopping at the mega food stores, the escalation in cost of labor and fuel, and the local loss of employers that drive local traffic have been factors that impact local produce farming in their ability to sell locally as well as compete with other food producers in the Western Hemisphere.

Agriculture & Forestry – Dependent Economic Development for Western New York State

In fulfilling the demand for year-round fresh fruits and vegetables, major grocery chains and food processes source their produce from wholesalers/brokers that can “fill the schedule” with a constant flow of produce from locations with different growing seasons. For an example, Birds Eye Foods, headquartered in Rochester, NY, sources produce from the locations noted below. Birds Eye purchases corn, beans, peas and Squash from New York State farms.

Vegetable/Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Asparagus												
Peru	■	■	■	■	■	■	■	■	■	■	■	■
Broccoli												
California	■	■	■	■	■	■	■	■	■	■	■	■
Cabbage												
California	■	■	■	■	■	■	■	■	■	■	■	■
Cauliflower												
California	■	■	■	■	■	■	■	■	■	■	■	■
Celery												
California	■	■	■	■	■	■	■	■	■	■	■	■
Corn												
Florida	■	■	■	■	■	■	■	■	■	■	■	■
Georgia					■	■	■	■	■	■	■	■
New York							■	■	■	■	■	■
Missouri							■	■	■	■	■	■
Green Beans												
Florida	■	■	■	■	■	■	■	■	■	■	■	■
Georgia					■	■	■	■	■	■	■	■
New York							■	■	■	■	■	■
Lettuce-Iceberg												
California	■	■	■	■	■	■	■	■	■	■	■	■
Lettuce-Romaine												
California	■	■	■	■	■	■	■	■	■	■	■	■
Lettuce-Red & Gr.												
California	■	■	■	■	■	■	■	■	■	■	■	■
Onions												
Mexico			■	■	■	■	■	■	■	■	■	■
Texas				■	■	■	■	■	■	■	■	■
California					■	■	■	■	■	■	■	■
Washington							■	■	■	■	■	■
Northeast	■	■	■	■	■	■	■	■	■	■	■	■
Onions-Sweet												
Texas		■	■	■	■	■	■	■	■	■	■	■
Georgia				■	■	■	■	■	■	■	■	■
California							■	■	■	■	■	■
Washington							■	■	■	■	■	■
South America	■	■	■	■	■	■	■	■	■	■	■	■
Peas												
Guatemala	■	■	■	■	■	■	■	■	■	■	■	■
Georgia					■	■	■	■	■	■	■	■
New York							■	■	■	■	■	■
Deleware/Maryland							■	■	■	■	■	■

■ In season ■ Not Prime Season

Agriculture & Forestry – Dependent Economic Development for Western New York State

Vegetable	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Peppers												
Florida												
Georgia												
North Carolina												
Michigan												
California												
Potatoes-Russets												
Idaho												
Washington												
Colorado												
Wisconsin												
Potatoes-White												
Florida												
Arizona												
California												
Washington												
Colorado												
Minn/North Dakota												
Northeast												
Potatoes-Red & Yukon												
▶ Florida												
Arizona												
California												
Washington												
Colorado												
Minn/North Dakota												
Northeast												
Potatoes-Fingerling												
▶ Colorado												
Washington												
Nebraska												
California												
Idaho												
Squash												
Mexico												
Florida												
Georgia												
North Carolina												
New York												
Michigan												
Sweet Potatoes												
Louisiana												
Mississippi												
North Carolina												
Grapes-Gr. Seedless												
California												
Mexico												
Chile												

In season
 Not Prime Season

Agriculture & Forestry – Dependent Economic Development for Western New York State

Vegetable	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Grapes-Red Seedless												
California												
Mexico												
Chile												
Grapes-Blk. Seedless												
California												
Chile												
Grapes-Red Globe												
California												
Chile												
Tomatoes												
California												
Florida												
Mexico												

In season
 Not Prime Season

Major Changes Over the Past 10-15 Years

There are a number of demand-related trends for produce – the demand for more fresh vegetables in the diet, the interest in organically grown foods with not pesticides and other chemicals, and the desire for foods that are high quality/gourmet type that have minimal preparation time. There is an expectation now that many different fruits and vegetables can be available throughout most of the year due to enhanced logistics management and packing techniques. There is an expanded draw from South America to complement the U.S. growing seasons.

With the expansion of the super stores with large produce sections, there is more locally grown produce available which impacts the local farm stand approach to marketing. The farmer has less opportunity to participate in the higher margin retain segment of the market.

Birds Eye Foods has just introduced in early 2006, a specially developed packaging for frozen vegetables (Steamfresh) that allows them to be steamed in the microwave in a closed system and retains more flavor and nutrients from other microwave or boiling food preparation methods. From first-hand experience, the quality difference in flavor and texture is really remarkable.

Growth Trends

According to a USDA research report (*Consumer Demand for Fruit and Vegetables: The U.S. Example, Susan L. Pollack*), the average person consumed 24% more vegetables and 8% more fruit during the two decades from 1979 to 1999. The increased consumption was attributed to more interest in healthy foods, increase in disposable income, better preservation techniques during shipping and an increase in the variety and availability of both fruits and vegetables. There was also a trend to consuming more fresh and frozen foods and less canned foods.

Challenges in Operating a Produce Farm

Key challenges include managing the rising costs of equipment, labor and energy against and minimal (2% AAGR) for produce and in locating new and reliable markets. It is very critical to maintain a balance of a low debt load while continually investing in replacement equipment. Farming is clearly a balancing act of resources within a highly variable operating environment with continual swings in weather conditions.

Resources That Are Missing or Could Be Located in Western New York

There is a potential for additional food processing that is targeted toward major eastern markets and the national market. Birds Eye Foods is divesting of three processing plants in the region that serve the generic frozen food market and could be purchased by a third party or major food co-operative.

Employment Level

Most of the farm employment consists of either family members, local residents or Hispanic workers that may live on the property either full or part time. Growth in the farm segment is very limited and mechanization and automation is cutting into demand for labor. As the minimum wage for New York surpasses \$7.00 per hour, the cost of labor continues to be an issue in overall profitability.

Specific Requirements for Facilities and Utilities

The vegetable segment requires fertile, well drained and flat soil with limited presence of large rocks. The region has a wide range of soil types and terrains from the rolling hills and deep valleys in the southern counties to the flat muck-type soils in the northern counties.

Processing operations require clean facilities with interstate access, good water supplies, ample power for equipment operation and wastewater treatment capacity for waste streams.

Potential for Growth

Birds Eye Foods' new lines of frozen foods represents opportunities for local produce production. However, local farmers need to work closely with suppliers to Birds Eye to provide year-round product supplies.

Agricultural Profile: Forestry

Overview

In the last decade, the U.S. forestry industry and forest resources have been changing rapidly. It is becoming more obvious that dynamic resource optimization, sound management, and utilization maximization are all necessities, not options. High log and lumber prices coupled with tight supplies and uncertainty about the long-term supply of traditional wood species challenge the industry to find ways to increase wood utilization.

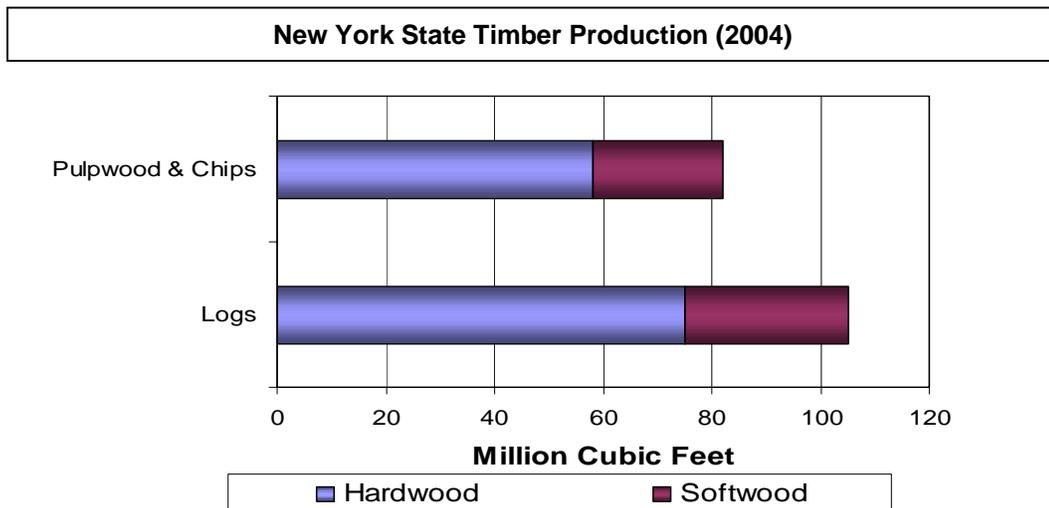


The earth continues to flatten as global forces significantly impact both the U.S. economy and forestry timber product industry. Over the years, China has emerged as the fastest growing importer of U.S. hardwoods, however Canada remains the U.S.’ largest hardwood trade partner importing 1,639,270 cubic meters of hardwood logs in 2005. Consequently, the U.S. wooden furniture manufacturing industry is struggling against growing Chinese import competition.

New York State Timber Production

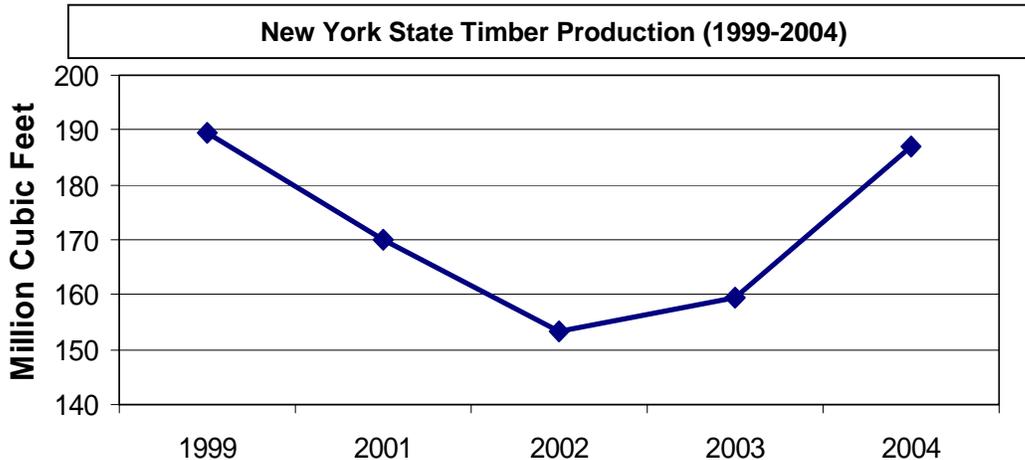
In 2004, New York State produced roughly 105 million cubic feet of logs, with hardwoods and softwoods accounting for 71% and 29% of total log production respectively. Similarly, 82 million cubic feet of pulpwood & chips were produced, with hardwoods and softwoods accounting for 71% and 29% of total pulpwood and chip production respectively.

According to returned surveys given by the NYS Department of Environmental Conservation, 71% of New York’s log harvest was in five species: sugar maple, red oak, red maple, black cherry and white pine. Sugar maple alone accounted for 24% of total log production. Softwood pulpwood & chip species included mostly white pine, hemlock and spruce. Estimated log production was 811 million board feet (MMbf) while pulpwood & chips harvest level was 2.3 million green tons.



Source: NYS Department of Environmental Conservation

After dropping roughly 19% to 153 million cubic feet in 2002, production rose by 22%, approximately 34 million cubic feet- two million cubic feet shy of 1999 product levels. *It should be noted that the majority of the data for this section comes from a study completed by the NYS Department of Environmental Conservation. It should be noted that their study lacks data for 2000 for reasons unspecified.*



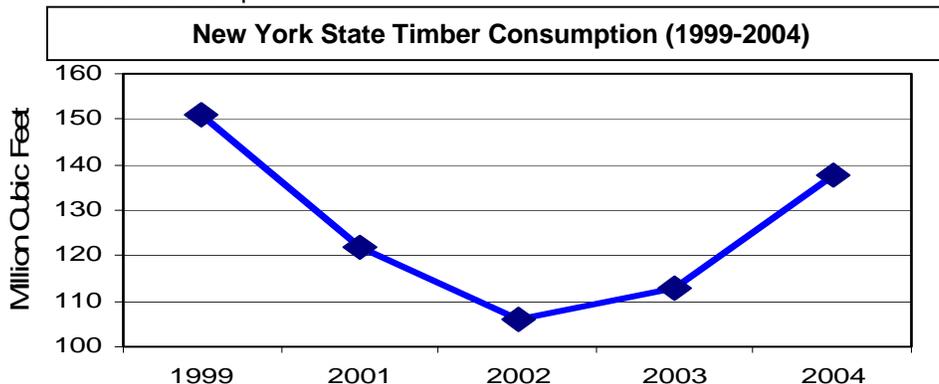
Source: NYS Department of Environmental Conservation

New York State Timber Consumption

Roughly 225 fixed location, traditional sawmills were known to operate during 2004. According to returned surveys, an additional 22 mills reported receiving no wood for the year. Approximately one-half of these mills have a capacity of 1 million board feet (MMbf) or more.

New York State mills consumed 535 MMbf of logs, of which roughly 93% was from New York State production. In addition to the preceding estimates, 1,500 portable and various other modest sized capacity fixed location sawmills operated to some extent in 2004. These facilities consumed around 60 MMbf, with almost all log receipts coming from New York production.

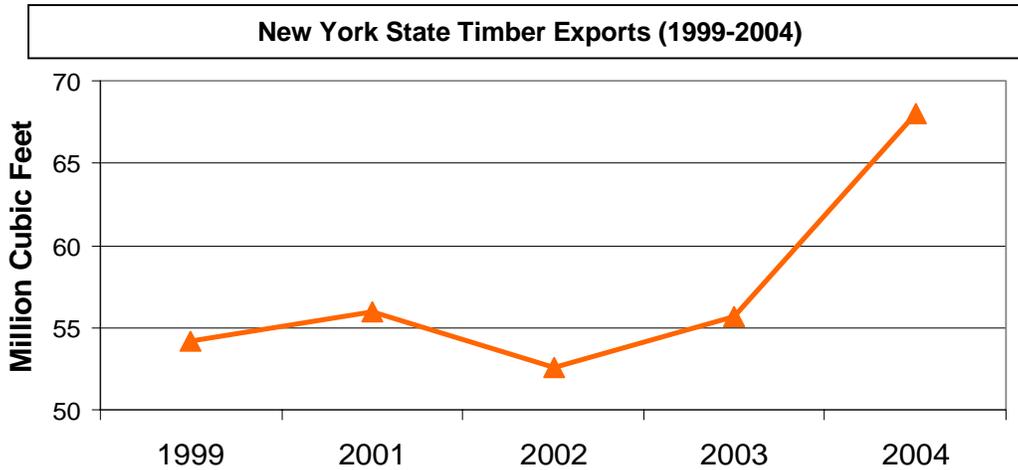
New York State facilities consumed about 1.3 million green tons of pulpwood & chip products from New York's forests. Between 1999 and 2004, New York State consumption of timber has decreased by 8.8%, which may be explained by marked increases in timber exports targeting E.U. member countries, Canada and especially China-U.S. hardwood log exports to China have risen by 5,199% between 1996 and 2005. This national trend helps explain some variation in New York State timber consumption.



Source: NYS Department of Environmental Conservation

New York State Timber Exports

Between 1999 and 2004, New York State’s net exports increased by 28%, approaching 49.3 million cubic feet in 2004. As indicated in the chart below, roughly 36%, or 68 million cubic feet of New York State’s production was exported in 2004.



Source: NYS Department of Environmental Conservation

Nearly three-quarters of New York State’s timber exports are shipped to Canada, the largest importer of New York’s industrial timber harvest. The remaining exported volume targets the bordering state of Pennsylvania and Vermont. In 2004, Canada imported roughly 204.5 MMbf of logs and 682,000 green tons.

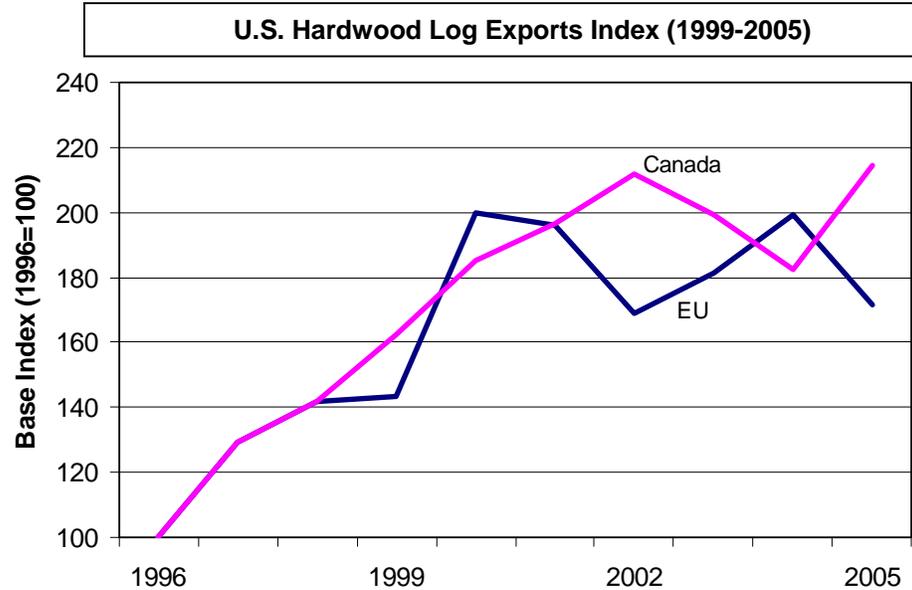
Combined, Pennsylvania and Vermont consumed the remaining 18.2 million cubic feet balance of exports, totaling 18.2 million cubic feet. Of these exports, 34 MMbf were hardwood logs and 207,360 green towns were hardwood pulpwood & chips.

U.S. Hardwood Log Exports

U.S. hardwood log exports reached record highs of 2.5 million cubic meters in 2005. Of these exports, Canada, China, and the E.U. absorbed roughly 68%,10% and 10% respectively. As mentioned above, China is absorbing U.S. hardwood log exports at exponential rates, growing at an average annual rate of 577% between 1996 and 2005. Chinese hardwood log imports from the U.S. surpassed the E.U. in 2005. China primarily uses the logs to manufacture wooden furniture that ultimately returns to the U.S. market.

The low-skill labor cost differential between the U.S. and China is what drives this trend and it is putting significant downward pressure on U.S. wooden furniture manufacturers, New York State manufacturers included. A more in-depth look at employment level and establishment trends nationwide, in New York State, and more specifically in Western New York (WNY) reinforces this argument and can be found on page 5 in this section.

Both the E.U. and Canada's hardwood log imports from the U.S. have been steadily increasing, most likely due to both population increases and positive demand shocks for wooden products from largely populated and affluent countries.



Source: USDA, FAS

Chinese imports of U.S. hardwood logs are growing at a blistering pace, especially relative to Canada and the E.U., the other two significant players in U.S.' hardwood log export market.

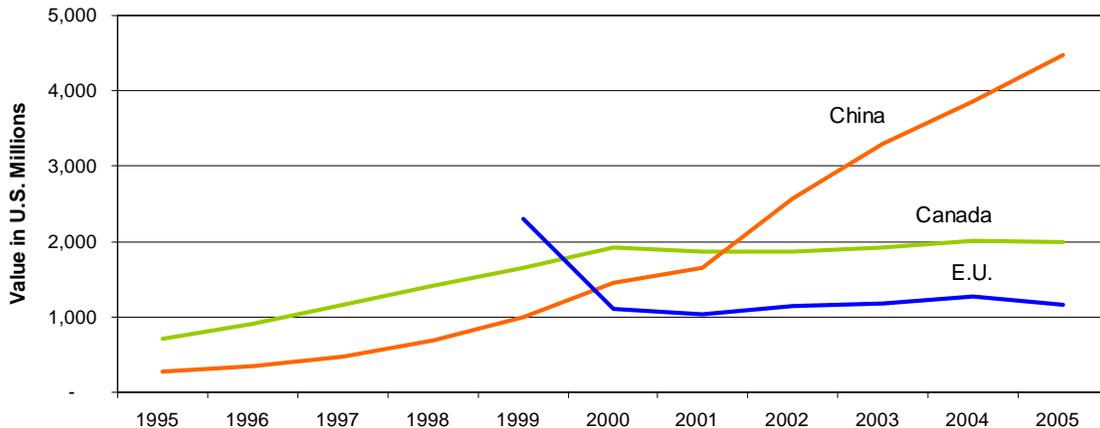


Source: USDA, FAS

U.S. Wooden Furniture Imports

As U.S. hardwood log exports are increasing at record paces, so too are wooden furniture imports. In 2005, U.S. wooden furniture imports reached a record high of \$10.3 billion dollars, in which 44% came from China.

U.S. Wooden Furniture (Office, Kitchen, Bedroom, NESOI) Imports (1995-2005)



Source: GTIS

China is indubitably the dominant player exporting roughly \$4.5 billion dollars of wooden furniture to the U.S. in 2005. Both U.S. and New York State wooden product manufacturers are struggling against increasing Chinese import competition

Competition

- Foreign competition and the states of Oregon, California and North Carolina are the three main wooden product manufacturing competitors for New York State.
- Wisconsin, Georgia and Pennsylvania are the three main paper manufacturing competitors for New York State. New York State is the 13th largest paper manufacturer in terms of value of shipments.

Major Changes

- With the relaxation of import control rules encouraged by NAFTA, FTAA and WTO policies, the domestic furniture manufacturing industry has continued to lose market share and shows no signs of stopping.
- The industry has also been marked by consolidation of larger companies via merger and acquisition.
- Business to consumer e-commerce threatens to disintermediate retailers.

Growth Trends

- Imports continue to rise equaling roughly 53% of domestic U.S. furniture production and account for 33% of U.S. consumption (2002, Schuler and Beuhlmann).

Challenges

- Increasing import competition
- Increasing conservation demand

Employment and Establishment Trends

Between the years of 2001 and 2005, U.S wood product manufacturing (NAICS 321) employment decreased annually by an average of 0.5%. However, New York State (NYS) and Western New York (WNY) wood product manufacturing employment decreased by 1.7% and 3.4% respectively. Interestingly, Pennsylvania grew annually by 2.1% on average during the same time frame. In 2005, WNY employed approximately 1,972 people in the wood product manufacturing industry, 20.5% of NYS wood product manufacturing employment.

The number of wood product manufacturing establishments in the U.S. dropped at an average annual rate of 2.1%, between 2001 and 2005. NYS and WNY experienced larger drops in establishments decreasing at an average annual rate of 3.9% and 3.2% respectively. Pennsylvania decreased at an average annual rate of 3.5%. In 2005, there were 544 establishments in NYS, with 14.2% located in WNY.

Wood Product Manufacturing NAICS 321 Employment

Year	US	PA	NY	WNY
2001	570,296	28,234	10,320	2,337
2002	553,919	28,998	9,815	1,947
2003	534,287	29,281	9,233	1,941
2004	547,973	30,087	9,534	1,980
2005	559,189	30,760	9,617	1,972
Change 2001 to 2005	-11,107	2,526	-703	-365
Avg Anl Chg	-0.5%	2.1%	-1.7%	-3.4%

Wood Product Manufacturing NAICS 321 Establishments

Year	US	PA	NY	WNY
2001	19,046	1,249	633	88
2002	18,487	1,164	609	86
2003	18,095	1,155	578	85
2004	17,731	1,096	558	81
2005	17,554	1,080	544	77
Change 2001 to 2005	-1,492	-169	-89	-11
Avg Anl Chg	-2.1%	-3.5%	-3.9%	-3.2%

Paper manufacturing (NAICS 322) has similarly exhibited decreases in both employment and establishments at a national level. Between 2001 and 2005, employment has dropped nationally at an average annual rate of 4.6%. NYS and WNY employment has dropped at an average annual rate of 4.7% and 3.1% respectively, hence indicating slight insulation from the national and state trends for WNY. Pennsylvania employment has decreased at an average annual rate of 5.3%. In 2005, NYS employed approximately 21,012 people in paper manufacturing, in which 11% were located in WNY.

The number of paper manufacturing establishment in the U.S has decreased at an average annual rate of 1.9%. Establishments in NYS and WNY decreased by 5% and 4.5% respectively, significantly higher than the national trend. However, NYS and WNY establishments declined less than Pennsylvanian establishments. In 2005, NYS had 372 paper manufacturing establishments, with 35 located in WNY.

Paper Manufacturing
NAICS 322
Employment

Year	US	PA	NY	WNY
2001	577,030	32,882	25,394	2,576
2002	543,379	30,735	23,182	2,455
2003	514,118	28,775	21,997	2,291
2004	493,341	27,496	21,256	2,245
2005	482,937	26,747	21,012	2,307
Change 2001 to 2005	-94,093	-6,135	-4,382	-269
Avg Anl Chg	-4.6%	-5.3%	-4.7%	-3.1%

Paper Manufacturing
NAICS 322
Establishments

Year	US	PA	NY	WNY
2001	6,983	399	451	42
2002	6,828	375	429	39
2003	6,673	359	400	38
2004	6,567	340	384	36
2005	6,466	318	372	35
Change 2001 to 2005	-517	-81	-79	-7
Avg Anl Chg	-1.9%	-5.5%	-5.0%	-4.5%

Non-upholstered wood household furniture manufacturing (NAICS 337122) employment has exhibited greater declines than traditional wood products employment, falling at an average annual rate of 9.8% nationally, between 2001 and 2005. However, NYS has only declined by 6.3%, suggesting that Chinese import competition may not compare to higher-value products targeting the N.Y.C area. This notion is supported by NYS establishment trends for non-upholstered wood household furniture. The average annual rate of decline in establishments for NYS is 2.8% less than the U.S. trend.

Nonupholstered Wood Household Furniture Mfg.
NAICS 337122
Employment

Year	US	PA	NY	WNY
2001	116,626	3,368	6,577	n.a.
2002	105,159	3,122	6,071	n.a.
2003	93,724	2,711	5,830	n.a.
2004	86,865	2,496	5,658	n.a.
2005	78,840	2,000	4,948	n.a.
Change 2001 to 2005	-37,786	-1,368	-1,629	
Avg Anl Chg	-9.8%	-12.3%	-6.3%	

Nonupholstered Wood Household Furniture Mfg.
NAICS 337122
Establishments

Year	US	PA	NY	WNY
2001	4,373	257	285	n.a.
2002	4,279	242	274	n.a.
2003	4,129	234	277	n.a.
2004	3,991	209	273	n.a.
2005	3,900	196	275	n.a.
Change 2001 to 2005	-473	-61	-10	
Avg Anl Chg	-3.0%	-6.8%	-0.8%	

Specific Requirements

- Depending on the scale of operations, furniture manufacturers could require skilled-labor and access to large sums of capital with respect to large start-up costs.
- Obviously hardwood producers would need access to wood and the most recent technologies to ensure their efficiency is viable.

Potential for Growth

- While the U.S. wood product industry struggles against foreign competition, there may be some room for growth due to demand increases from a growing affluent population. This potential is primarily in the custom and artisan furniture arena as these products are relatively insulated from import competition.
- A now questionable housing market will have significant impacts on wood product growth. Should the housing market show resilience, there may be demand growth for wooden furniture. However, a pop in the market could cause significant downward pressure on the industry.

Agricultural Profile: Greenhouse and Organics

Overview

Organic greenhouse vegetable production is practiced by certified organic farmers and has potential for wider adaptation by established greenhouse operators and entry-level growers as a niche market or sustainable method of production.

There were 3,416 greenhouse vegetable farms in the U.S. in 2002, up from 2,871 in 1997, a 3.5 %CAGR. The area under glass went from 41 million square feet (SF) in 1997 to over 64 million SF in 2003, a 9.4% CAGR. The average size of a greenhouse was 18,842 SF in 2002 up from 14,208 SF in 1997.^[1]



U.S. sales of organic food totaled \$5.4 billion in 1998, about \$6.5 billion in 1999, and reached nearly \$7.8 billion in 2000. The market has grown 20% - 24% annually during the 1990s. The organic industry continues to experience impressive growth with sales for 2004 that exceed \$12 billion dollars. Sales of fresh organic produce in natural food supermarkets totaled \$708 million in 1998. Fresh organic produce sales summed to \$83 million in 1999, which was 69.4 percent of total fresh, produce sales in natural foods supermarkets.

New York greenhouse vegetable industry totaled 212 farms in 2002 compared to 132 farms totaled in 1997. (See table 1)

Table 1 Greenhouse Vegetable Production Farms by Area for New York and the United States in 2002

Area	Farms		
	1997	2002	Change
New York	132	212	0.62
United States	2,871	3,416	0.84
Area	Square Feet		
	1997	2002	Change
New York	645,753	2,861,826	0.23
United States	41,077,089	64,364,430	0.64

Source: Census of Agriculture 2002

Arizona greenhouse farms average 211,500 square feet in comparison to a U.S. average of 18,842 square feet. Existing New York greenhouse average an over 9,500 square feet. (See figure 1)

^[1] The most recent data available was used for this as well as other profiles. The most recent data available was the 2002 Census of Agriculture used to calculate annual growth rate for New York, United States and Ontario Canada.

Table 2 Greenhouse Vegetable Productions for New York and the United States 2002 Square Feet

2002 Farms by area:	U.S.	Farm	N.Y.	Farm	Square Feet	
		Change		Change	U.S.	N.Y.
1 to 999 square feet	819	0	60	0	311,512	23,673
1,000 to 1,999 square feet	539	0.66	39	0.65	728,244	49,442
2,000 to 2,999 square feet	326	0.60	27	0.69	774,198	60,294
3,000 to 3,999 square feet	365	1.12	24	0.89	1,209,203	79,906
6,000 to 6,999 square feet	296	0.81	21	0.88	2,220,320	102,782

Source: Census of Agriculture 2002

Competition

Four large firms dominate the U.S. Greenhouse industry.

- Eurofresh, Inc.
- Village Farms
- Houweling Nurseries
- SunBlest

Eurofresh, Inc.

Third generation Dutch greenhouse owners founded Eurofresh in 1990 in Pennsylvania. Eurofresh moved to Arizona in 1992.

Eurofresh Farms is located in Willcox, Arizona. It is the leading year-round producer and marketer of greenhouse tomatoes in the U.S.

Eurofresh sold over 100 million pounds of tomatoes in 2004 265 acres of production of pesticide free tomatoes are grown in glass greenhouses.

Willcox, Arizona was chosen for its high level of sunlight, abundant supply of water, and ready access to labor and transportation.

Eurofresh introduced TOV (tomatoes on vine) in 1998. Eurofresh owns 781 acres in Willcox, AZ, with 221 acres of greenhouse facilities. Eurofresh also owns 186 acres of land in Snowflake, AZ, with 44 acres of finished greenhouse facilities.

Eurofresh greenhouses are divided into 40-acre sites, each containing its own pack house, boiler room, irrigation and critical systems.

Village Farms

Village Farms began production in 1991 in Pennsylvania.

Production and harvesting began in Texas in 1997. Most production has since moved to Texas from Pennsylvania.

Village Farms has over 15 years experience in the hydroponic greenhouse industry. Production has grown from 10 acres in 1991 to 130 acres in 2005.

Village Farms has 4 operating divisions.



The Marfa Division in Marfa, Texas includes 40 acres of growing area and 76,230 sq. ft. of support facilities. 416 thousand plants yield 20 million pounds of tomatoes annually. The Marfa division primarily grows cluster / on-the-vine tomatoes. Operation began in 1998. Tomato production is from August through June.

The Presidio Division is also located in Marfa, Texas. It includes the same production acreage and facilities as the Marfa division. This division produces tomatoes from August through June. 26 acres began production in 1998 with the remaining production beginning in 2003. This division focuses on beefsteak and cluster / on-the-vine tomatoes.

The Ft. Davis Division is located in Ft. Davis, Texas. It is 40 acres in size and has the same 76,230 sq. ft. of support facilities as the other Texas divisions. Full-scale operation began in 1997. Ft. Davis focuses on Cluster / on-the-vine tomatoes.

The Keystone Division is the original 10-acre greenhouse in Ringgold, PA. 97 thousand plants yield 5 million pounds of beefsteak tomatoes per year. This facility produces during the summer.

Houweling Nurseries

Houweling Nurseries operates a 34 ha greenhouse in Oxnard, California. A Canadian greenhouse grower owns Houweling. Houweling markets its production through firms in British Columbia. These firms also sell greenhouse cucumbers and peppers

SunBlest

SunBlest Farms is located in Peyton, Colorado. SunBlest was started in 1999.

SunBlest Farms began production with 544, 500 sq. ft. of production. It currently operates 32 ha in Colorado and 17 ha in Virginia.

SunBlest took over the operations of Colorado Greenhouse when that company went bankrupt in 2000.

SunBlest uses traditional hydroponic production techniques except that plants are grown in coconut-fiber slabs (also known as coir dust) from BioGrow. SunBlest management believes that coir dust provides a superior “root – friendly” medium for growing produce

Table 3 Greenhouse Vegetables Production for each New York County 1997 and 2002

County	Number Farms	Sales	Sq.ft under	Percent	State Rank
			glass or other	of	
			Protection	Total	
Allegany	25	3,781	(D)	8	17
Cattaraugus	49	9,676	259,490	17	5
Chautauqua	50	3,293	236,252	3	21
Erie	123	21,514	2,832,991	23	2
Genesee	33		150,174		
Niagara	82		725,795		
Orleans	30	592	76,232	1	53
Wyoming	27		58,328		
State					
New York	2,552	344,320		11	2

Source: Census of Agriculture 2002

Table 4 Greenhouse and Nursery Farms Sales and Percent of Total in 2002 per County

County	2002			1997		
	Number Farms	Sq.ft under	Acres in the	Number Farms	Sq.ft under	Acres in the
		glass or other			glass or other	
		Protection	Open		Protection	Open
Allegany	1	(D)	(X)	(NA)	(NA)	(NA)
Cattaraugus	1	(D)	(X)	(NA)	(NA)	(NA)
Chautauqua	4	3,175	(X)	7	9,974	(X)
Erie	4	(D)	(X)	(NA)	(NA)	(NA)
Genesee	3	(D)	(X)	(NA)	(NA)	(NA)
Niagara	7	(D)	(X)	6	34,534	(X)
Orleans	1	(D)	(X)	(NA)	(NA)	(NA)
Wyoming	1	(D)	(X)	(NA)	(NA)	(NA)
New York	212	2,861,826	(X)	132	645,753	(X)

Source: Census of Agriculture 2002

Major Changes

The adoption of national standards for certification is expected to open up new markets for U. S. organic producers. Internationally, organic sales continue to grow as well.

Organic certification is the public's assurance that products have been grown and handled according to strict procedures without persistent toxic chemical inputs. When you see that a product has been Certified Organic by QAI (Quality Assurance International), you can rest assured that the product, its ingredients and the manufacturer have gone through a thorough investigation.

In 2000, conventional supermarkets compromised 99 percent of all food stores and sold 49 percent of all organic products

Growth Trends

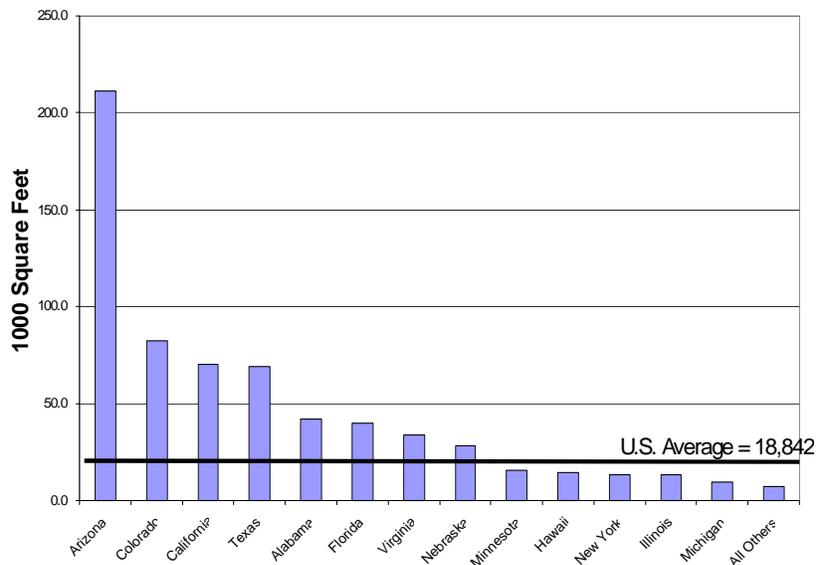
The Canadian greenhouse vegetable industry has grown rapidly and shown strong interest in expansion.

The Canadian greenhouse vegetable industry is centered in Ontario with what is reported by USDA to be the largest single grouping of greenhouse in North America.

Because of the high demand for organic products, organic producers are able to sell their products at a higher price than they could sell the same product when conventionally produced.

Organic agriculture is one o the fastest growing agricultural markets in the United States. The U.S. market is currently the largest market for organic agricultural products.

Figure 1 Average Vegetable Greenhouse Square Footage by State



Source: Census of Agriculture, 2002

Potential for Growth

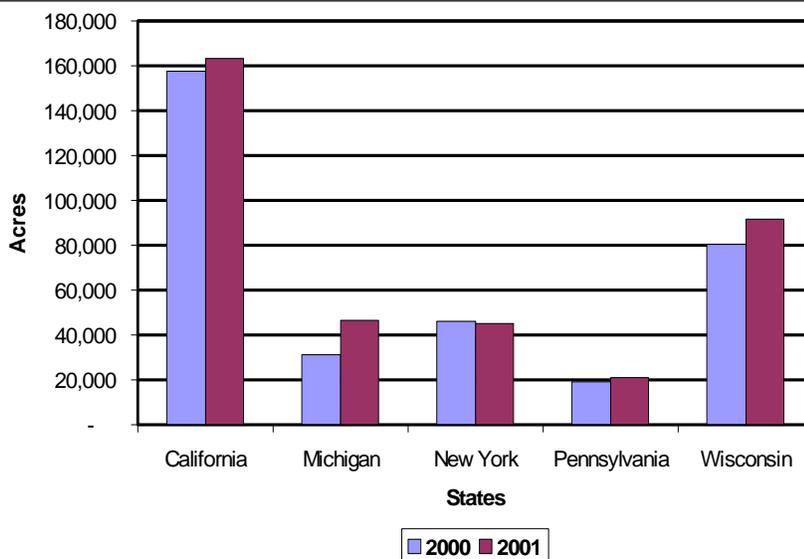
U.S. Firms focus on winter months when prices are higher. Some firms operate year-round.

Greenhouse tomatoes in 2003 represented an estimated 17 percent of U.S. fresh tomato supply. Even though greenhouse tomatoes still constitute a minority share of the U.S. fresh tomato market, their influence is concentrated and growing in retail channels, which represent about half of U.S. tomato consumption. Around 37 percent of all fresh tomatoes sold in U.S. retail stores are now greenhouse, compared with negligible amounts in the early 1990s.(see table 3)

The United States, Canada, and Mexico have all developed major greenhouse industries. The United States is the largest North American market for greenhouse tomatoes, and U.S. imports from Canada and Mexico are larger than domestic production. In recent years, the growth in U.S. imports has exceeded the growth in U.S. production. In 2003, Canada accounted for an estimated 46 percent of U.S. imports of greenhouse tomatoes. Mexico's share was 45 percent. As the greenhouse tomato industry has transitioned from niche to mainstream status, it has become part of a more integrated North American market, following the pattern established by the field tomato industry. (See Table3)

The Canadian greenhouse vegetable industry is centered in Ontario with what is reported by USDA to be the largest single grouping of greenhouse in North America.

Figure 2 Certified Organic Pastures and Cropland for 2000 and 2001



Source: Census of Agriculture, 2002

Wal-Mart Stores Inc. as well as other giant food processors and packagers of national brands are getting in on the organic action. The nation's largest retailer, Wal-Mart stores, decided earlier this year to expand its organic offerings in the produce and grocery aisles across all its outlets and doubling the number of organic items in 10% of its stores.

Wal-Mart is introducing about 200 additional organic grocery products in 370 of its stores with the higher-income customer demographics. "When a company the size of Wal-Mart is suddenly very interested, it gives us more reason to think the wave has gotten to the size where we can surf it," says Paul Norman, president of U.S. morning foods at Kellogg Co., of Battle Creek Michigan, which launched organic versions of Raisin Bran, Frosted Mini Wheats, and Rice Krispies earlier this summer.

Challenges

Considering the tradeoffs between minimization of transportation costs of the products and minimization of heating costs makes location decisions in establishment of a greenhouse vegetable facility.

Minimization of heating costs (and concurrently, enabling of year long production) is best served by a location with year-round mild temperatures and significant sunlight hours. This factor has led to establishment of facilities in far West Texas and Arizona.

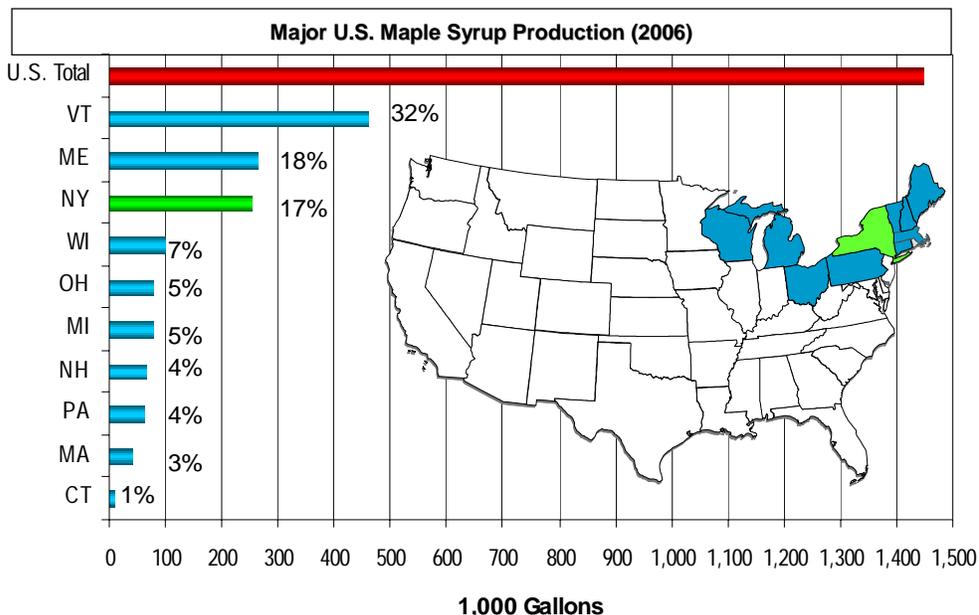
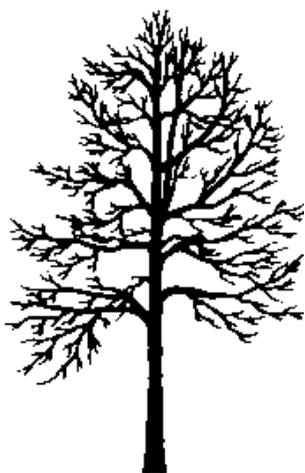
Agricultural Profile: Maple Products

Overview

Maple syrup and other syrup-derived products are a popular cash crop for both farmers and individuals within the region. New York State is the third largest U.S. producer behind Vermont and Maine. In 2005, New York accounted for 18% of the U.S. maple syrup production.

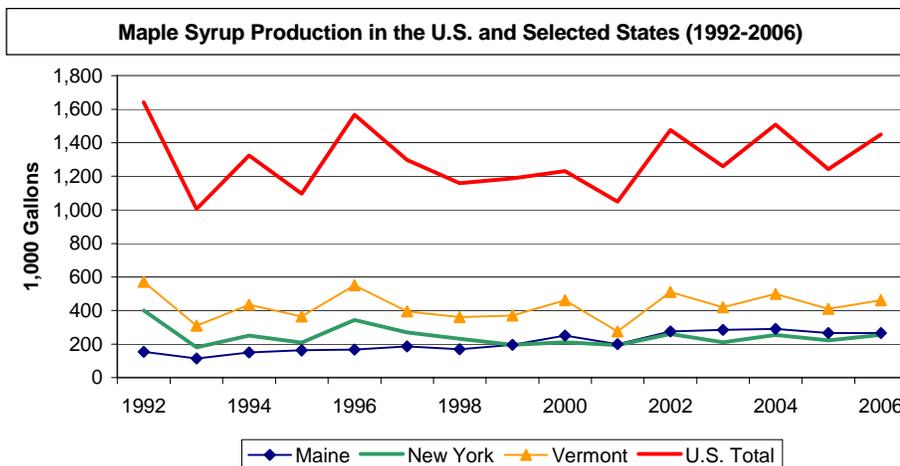


Maple syrup is produced primarily in the northeast U.S. and southeastern and maritime Canada where there is the climate that supports the sugar maple tree and has a period in the spring of warm days followed by cool nights.



Source: USDA (2006)

Not considering yield variations, due primarily to weather conditions, the U.S maple syrup production has not evolved significantly in the last decade and averages 1.3 million gallons a year. The same observation is true for Maine, New York and Vermont.



Source: NASS, USDA

The U.S. is a net importer of maple syrup, with imports totaling 4.9 million gallons in 2005. Between 1990 and 2005, maple syrup imports have increased 158%. The U.S. is Canada's largest export market, with about 76% of total exports in 2005.

Approximately 85% of the syrup produced in Western New York is sold in bulk to major food processors as some type of flavor enhancer. The balance is sold from the farm, in local farm markets or at fairs and other events as bottled syrup, maple creams, maple candy and other related products.

Syrup is sold in four grade levels that vary based on color from light to dark amber. Finished maple syrup weighs about 11 pounds per gallon (water weighs 8.34 pounds per gallon) and it takes about 40 gallons of sap to produce one gallon of syrup. The average U.S. market price for syrup is \$28.50/gallon.

Competition

- Canada produces about 80% of the world's maple syrup. Quebec, in particular, accounts for 93% of Canadian production, with nearly 5.7 million gallons in 2005. Between 2000 and 2005, exports of maple syrup from Canada increased 28%. Most of Quebec maple syrup producers are members of the Fédération des Producteurs Acéricoles du Québec, which leads efforts in promotion and market development to improve the competitiveness of Canadian maple products. The association gathers about 7,000 syrup maker producers from Quebec.
- World demand for maple syrup leads supply. The Middle East has shown some interest in maple flavorings. The syrup market has stiff competition from cane sugar and corn syrup-based syrups with dark color and higher viscosities (thicker consistency) particularly among younger consumers and those that dislike the strong maple flavor.

Major Changes

- Marketing has evolved from selling directly the syrup in retail to more value-added markets such as cereals, yogurt, etc.
- The primary changes have related to the application of technology to the collection and processing of maple sap. Both the collection of sap and the production of syrup have become much more efficient through the use of vacuum induced plastic tubing for collection and the use of reverse osmosis for removing 70-80% of the water in the sap prior to evaporation. The reduction in water content lowers the cost of evaporation and reduces the exposure of the sap to prolonged high temperatures.
- Public exposure to maple syrup has increased over the past 10 years as the Western New York Maple Producers Association has sponsored the annual Maple Weekend in mid-March each year for tourist to visit sugar houses throughout the region (and the state) to see first hand how sap is collected and processed. This event has spread to other parts of New York State.

Growth Trends

- Since 2001, the annual national production of maple syrup has ranged from 1.1 to 1.5 million gallons based partly on yield and on some expansion of operations. The initial capital investment for a small "hobby" operation may be as much as \$4,000 and then go up substantially as more sophisticated equipment is utilized. There are currently just under 1,500 maple producers in New York State with about 10% in the western maple producers region that includes the 14 most western counties in the state.

Challenges

- It is a combination of fairly wide fluctuations in sap production from one year to the next as well as the rising cost of energy and the minimum wage rate against the price of syrup that may only rise about 2% per year in good times.

Resources

- Most importantly, we have a large concentration of sugar maples that could be further exploited there is more capacity. Because the major use of the product is to enhance the flavor of other products (beans, meats, apple sauce, baking, etc.) the existence of maple syrup will not attract a major food producer. The best we could do is continue to expand the primary production of sap and syrup through more investment and management of maple forests.

Employment

- Employment within the industry is obviously very seasonal and usually draws in friends and family as well as near minimum-wage workers.

Specific Requirements

- The primary facility is the sugar house that can typically range from a small 10' x 10' shed to much larger based on the size of the operation. The equipment consists of an evaporator (either oil or wood fired), other pumping equipment and storage tanks as well as filters and reverse osmosis equipment.

Potential for Growth

- The industry represents a good cash crop for the region and state as well as drives tourism in the early spring time period when other activities are down. The region could set up a revolving loan fund to help businesses startup and expand as a means of supporting potential growth as well as develop an overall plan on the long-term potential size of growth and where forests need to be set aside and managed.